

Five-Year Review Report

Second Five-Year Review Report for Midstate Disposal Town of Cleveland Marathon County, Wisconsin

August 2004

PREPARED BY:

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West Central Region
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For U.S. EPA, Region V

Approved by: _____

Date: _____

8/17/04

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List of Acronyms

ARAR	Applicable or Relevant and Appropriate Requirement
CD	Consent Decree
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CTH	County Trunk Highway
EPA	United States Environmental Protection Agency
ES	Enforcement Standard per Wisconsin Administrative Code NR 140
CFR	Code of Federal Regulations
ECA	Environmental Contamination Assessment
MCL	Maximum Contaminant Level
MCLG	Maximum Contaminant Level Goal
NCP	National Contingency Plan
NPL	National Priorities List
O&M	Operation and Maintenance
PAH	Polynuclear Aromatic Hydrocarbon
PAL	Preventive Action Limit per Wisconsin Administrative Code NR 140
PCB	Polychlorinated Biphenyl
PCE	Perchloroethylene, also known as Tetrachloroethylene
PRP	Potentially Responsible Party
RA	Remedial Action
RAA	Remedial Action Alternatives
RAO	Remedial Action Objective
RD	Remedial Design
RI/FS	Remedial Investigation/Feasibility Study
RPM	Remedial Project Manager
ROD	Record of Decision
SDWA	Safe Drinking Water Act
TCE	Trichloroethylene
VOC	Volatile Organic Compound
WAC	Wisconsin Administrative Code
WDNR	Wisconsin Department of Natural Resources

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Executive Summary

The remedy for the Midstate Disposal Landfill in the Town of Cleveland, Wisconsin included construction of a cap over two waste areas and one sludge lagoon, a gas extraction system with off-gas treatment, a leachate collection system with off-site treatment of the leachate, site fencing, monitoring of groundwater, surface water, landfill gas, and drinking water, and institutional controls. The site achieved remedial construction completion with completion of the Preliminary Closeout Report on September 22, 1994. The trigger for this second five-year review was the signature date of the first five-year review, which was February 11, 1999.

The assessment of this five-year review found that the remedy was constructed in substantial accordance with the requirements of the Record of Decision (ROD) and ROD Amendment, and that it remains protective of human health in the short term. One Amendment of the Record of Decision was issued to modify the requirement for an alternative water supply. As part of an ongoing pilot study, the operation of the gas extraction system has been modified to eliminate active extraction and flaring. The immediate threats have been addressed and the remedy is expected to be protective when groundwater cleanup goals are achieved which is expected to require 30 years.

The remedy is considered protective in the short-term because there is no evidence that there is current exposure. However, in order for the remedy to be protective in the long-term, groundwater cleanup goals must be achieved and institutional controls on the site, which Mid - State Disposal Inc. agreed to record with the County Register of Deeds pursuant to the United States v. Mid-State Disposal, Inc, Consent Decree must be implemented to protect the remedy by prohibiting on-site excavation and on-site well installation. Additional residential well sampling will also be performed to confirm that residential wells that had previously been determined not to be impacted by the site, remain safe to use.

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Five-Year Review Summary Form

SITE IDENTIFICATION		
Site name (from WasteLAN): Mid-state Disposal Superfund Site		
EPA ID (from WasteLAN): WID9808233082		
Region: 5	State: WI	City/County: Town of Cleveland/Marathon County
SITE STATUS		
NPL status: c Final		
Remediation status: Construction Complete -- O & M On-going		
Multiple OUs? NO	Construction completion date: 9 /22/1994	
Has site been put into reuse? NO		
REVIEW STATUS		
Lead agency: EPA		
Author name: Eileen Kramer		
Author title: Project Manager	Author affiliation: WDNR, West Central Region	
Review period:** <u>10 / 6 / 2003</u> to <u>2 / 26 / 2004</u>		
Date(s) of site inspection: <u>10/7/2003 and 1/15/2004</u>		
Type of review: Post-SARA Statutory		
Review number: Two		
<input type="checkbox"/> Previous Five-Year Review Report		
Triggering action date (from WasteLAN <u>2/11/1999</u>)		
Due date (five years after triggering action date): <u>2/11/2004</u>		

* ["OU" refers to operable unit.]

** [Review period should correspond to the actual start and end dates of the Five-Year Review in WasteLAN.]

Five-Year Review Summary Form, cont'd.

Issues:

- 1.) The occasional detection of benzene at State of Wisconsin NR 140 Preventive Action Limits (PAL) standards in a nearby residential well will necessitate additional evaluation.
- 2.) Excessive leachate has been found in several gas extraction wells on Old Mound.
- 3.) Institutional controls have not been implemented to prohibit soil excavation and on-site well installation and other activities which would interfere with the site remedy.
- 4.) Minor monitoring well maintenance deficiencies were found at the site.
- 5.) The gas extraction system is currently being run as a pilot on a passive gas venting mode.
- 6.) There have been consistent exceedences of the NR 140 PAL for benzene in monitoring well MW-6. Although downgradient residences are 2000 feet away, there is not a monitoring well located between MW-6 and the residences that would detect whether there is a potential for impact on these residences
- 7.) Residential wells southwest of the site are not currently being sampled because of their location relative to the site and previous groundwater sampling had not detected significant concentrations of contaminants. Since these wells have not been sampled in approximately 10 years, sampling should be conducted to verify the previous determination that these wells are not impacted by the site.

Recommendations and Follow-up Actions:

- 1.) The Agencies will evaluate the benzene detections in the nearby residential well and determine what additional evaluation should be conducted.
- 2.) The groundwater monitoring well maintenance issues and the excessive standing leachate in gas extraction wells will be addressed.
- 3.) Institutional controls will be implemented to prevent on-site excavation into the landfill caps, future well construction on the site and also disturbance of the groundwater monitoring and landfill gas monitoring and leachate collection facilities. U.S. EPA will work with Mr. Vernon Verjinsky of Mid State Disposal Inc. to ensure that Section VI, Performance of Work, Conveyance of the Facility Section of the U.S. V. Mid State Disposal Inc., et al Consent Decree, Docket No.89-C-1017-S, U.S. District Court, W.D. WISC.(1990) is complied with.
- 4.) The Agencies will make a final determination on whether the gas extraction system can continue to be operated in a passive gas venting mode.
- 5.) Collection and off-site treatment of leachate, ground water monitoring, quarterly gas probe and residential monitoring should be continued.
- 6.) Selected residential wells downgradient of monitoring well MW-6 will be sampled to determine whether contamination has moved towards the residential wells to the west.
- 7.) Residential well RW-1677, southwest of the site, will be sampled to confirm previous findings that contamination is not moving towards the residential wells southwest of the site.

Protectiveness Statement(s):

The remedy is considered protective in the short-term because there is no evidence that there is current exposure. However, in order for the remedy to be protective in the long-term, groundwater cleanup goals must be achieved and an institutional control must be implemented to control on-site excavation and well installation.

Long-Term Protectiveness:

Long-term protectiveness of the constructed remedial action will be verified through long-term sampling of groundwater and perimeter gas probes to fully evaluate the effectiveness of the cover systems, leachate collection and landfill gas venting systems. Additional sampling and analysis will be conducted on a regular basis as required. Improvements in the water quality of the aquifer indicate that the remedy is functioning as designed. Further, an institutional control that controls on-site excavation and well installation must be implemented.

Other Comments:

None.

**Mid-State Disposal Superfund Site
Town of Cleveland, Wisconsin
Second Five-Year Review Report**

I. Introduction

The purpose of five-year reviews is to determine whether the remedy at a site is protective of human health and the environment. The methods, findings, and conclusions of reviews are documented in Five-Year Review reports. In addition, Five-Year Review reports identify issues found during the review, if any, and recommendations to address them.

The Wisconsin Department of Natural Resources is preparing this Five-Year Review report pursuant to CERCLA §121 and the National Contingency Plan (NCP). CERCLA §121 states:

If the President selects a remedial action that results in any hazardous substances, pollutants, or contaminants remaining at the site, the President shall review such remedial action no less often than each five years after the initiation of such remedial action to assure that human health and the environment are being protected by the remedial action being implemented. In addition, if upon such review it is the judgement of the President that action is appropriate at such site in accordance with section [104] or [106], the President shall take or require such action. The President shall report to the Congress a list of facilities for which such review is required, the results of all such reviews, and any actions taken as a result of such reviews.

The U.S. EPA interpreted this requirement further in the NCP; 40 CFR §300.430(f)(4)(ii) states:

If a remedial action is selected that results in hazardous substances, pollutants, or contaminants remaining at the site above levels that allow for unlimited use and unrestricted exposure, the lead agency shall review such action no less often than every five years after the initiation of the selected remedial action.

The Wisconsin Department of Natural Resources (WDNR) conducted the five-year review of the remedy implemented at the Mid-State Disposal Superfund Site, Town of Cleveland, Wisconsin. This review was conducted by the State Project Manager for the entire site from October 6, 2003 through May 2004. Information for this review was obtained from several sources including site visits, reports submitted by contractors to the EPA, and reports prepared and submitted by STS Consultants, under contract to the lead settling defendant Weyerhaeuser Corporation. This report documents the results of the review.

This is the second five-year review for the Mid-State Disposal Site. The triggering action for this statutory review is the completion date of the first five-year review which was February 11, 1999. The five-year review is required due to the fact that hazardous substances, pollutants, or contaminants remain at the site above levels that allow for unlimited use and unrestricted exposure.

II. Site Chronology

Table 1 - Chronology of Site Events

Event	Date
Landfill operations at site	1970-1978
Agreement by Weyerhaeuser to close landfill & sludge lagoon	1980
Closure work completed at landfills and cover constructed on sludge lagoon	1980
WDNR installed leachate collection tank on west side of Interim Landfill	1983
Final listing on EPA National Priorities List	1984
Remedial Investigation and Feasibility Study by EPA's Contractor	1983-1988
Final Remedial Investigation Report	4/8/1988
Feasibility Study	7/15/1988
Record of Decision (ROD) signed	9/30/1988
Consent Decree	3/28/90
Pre-design Study by STS Consultants for the Settling Defendants	1991
Remedial design completed	1993
RA Construction start	April 1993
Alternate Water Supply (AWS) Study Completed by STS	March 1994
Preliminary Closeout Report Signed	9/22/1994
Amendment to ROD to Eliminate AWS with Contingency for Residential Water Treatment	August 4, 1995
First Five-Year Review Report	2/11/1999
Conversion of gas extraction system to operation without the flare	March 2000
Pilot Study to Convert Gas Extraction System to Passive Venting	February 2001

III. Background

Physical Characteristics

The Mid-State Disposal Site is located in the SW ¼ of Section 4, Township 27 North, Range 4 East, Cleveland Township, Wisconsin. The Town of Cleveland has a population of approximately 1160 residents (2000 census), and is located in Marathon County. The site consists of three disposal areas and is situated on the western portion of a 160-acre parcel of land. The waste areas are a 30-acre landfill, referred to as the Old Mound; a seven-acre Interim Expansion Area and the three-acre Sludge Lagoon. The site is bounded on the northeast by an 11-acre Weyerhaeuser sludge lagoon, on the east by agricultural land, on the north by a wooded area, on the northwest by a recreational trail, (former Chicago and Northwestern Railroad right of way), on the south by Big Rapids Road, residences and agricultural land, and on the west by agricultural land. (See Attachment 1). A sub-surface gas pipeline runs along the western perimeter of the largest waste area in a north-south orientation.

Topography of the area is gently rolling to flat. Other than the waste mounds and the sludge lagoon, elevations on and near the site range from 1290 feet mean sea level (msl) to 1320 feet msl. Maximum elevation on the site is at the Old Mound with an elevation of 1350 feet. Surface water drainage occurs to the west to an unnamed tributary of Rock Creek. Drainage to the east is to an unnamed tributary to the Eau Pleine River. Geology of the site consists of glacial ground moraine over saprolite, which has developed on the underlying fractured metamorphic rock. Metamorphic bedrock is exposed at the surface in several locations on the site. Unconsolidated materials range in thickness from zero to 23 feet.

The water table is shallow with depths to groundwater across the site ranging from zero to 12 feet below ground surface. Horizontal flow in the bedrock is partially controlled by two groundwater divides. One groundwater divide is oriented north-south near the eastern edge of the Old Mound and runs parallel to the axis of the bedrock ridge observed in this area. West of this north-south divide, groundwater flows from the north and south toward the center of the Old Mound Area, and then in a westerly direction. Prior to the RA, groundwater velocities west of the north-south divide were estimated to be 1200 ft/yr. East of the north-south divide, groundwater also enters the site from the north and south, but then flows to the east. Prior to the RA, groundwater velocities east of the north-south divide were estimated to be 125 ft/yr. Following construction of the remedial cap on the Old Mound, reduced infiltration has contributed to an eastward shift of the divide.

Another groundwater divide, which is oriented in an east-west direction, is located at the southern edge of the Old Mound Area. Although available data cannot fix the position of this divide with great confidence, a southerly or southeasterly flow most likely occurs, originating at the southern end of the Old Mound Area.

Observed vertical flow gradients vary in direction and are not of great magnitude.

Land and Resource Use

The historic land use of the site was farming until Mid-State Disposal, Inc. began waste filling in 1970. In 1977, Wisconsin DNR approved plans for closure of the Old Mound area, expansion into the Interim Expansion area, and construction of the sludge lagoon. In 1979, Weyerhaeuser reached an agreement with the WDNR to close the landfills and sludge lagoon.

Land use surrounding the site is predominantly agricultural, with sparse rural residential

development, and some small business, such as vehicle and small engine repair. Residences have private drinking water wells. The former railroad grade that runs southwest–northeast at the northwest corner of the site has been developed into a recreational trail.

History of Contamination

The Old Mound Area landfill contains municipal wastes, papermill sludges, asbestos dust, pesticides, and solvents. The Interim Expansion Area reportedly contains the same types of wastes with the exception of the papermill sludges. The Sludge Disposal Lagoon allegedly contains papermill sludges.

Landfilling of municipal and industrial wastes at the site began in 1970 by Mid-State Disposal, Inc., after the Wisconsin Department of Natural Resources (WDNR) granted approval for these activities. Environmental problems and permit violations at the site were noted in 1974 when the WDNR inspected the site for compliance with new WDNR solid waste disposal regulations. Violations included landfilling of hazardous waste, excessive leachate ponding, and landfilling beyond the approved landfilling area. A large leachate pond had also formed along the western edge of the property. A berm that retained the leachate on-site was breached on several occasions during the late 1970s.

In response to these violations, WDNR brought legal action against Mid-State Disposal, Inc. A judgment was entered against the firm in 1977 for improper closure and abandonment of the Old Mound Area landfill. Several other legal actions and complaints were filed against the disposal company, including some initiated by local residents. In 1977, the WDNR approved plans for closure of the Old Mound Area and for construction of the Sludge Lagoon. Operation of the new waste disposal areas was approved in 1978.

Initial Response

In 1979, an agreement was reached between the Weyerhaeuser Company, a generator of waste disposed of at the facility, and the WDNR, to properly abandon the facility. The existing ponded leachate was removed and the three waste disposal areas were covered in accordance with regulations that existed at that time. In 1980, WDNR nominated the site to the EPA as a candidate for inclusion on the Superfund National Priorities List (NPL). In 1983, the State terminated its legal actions against Mid-State Disposal, Inc., because the Corporation lacked assets. In the fall of 1983, EPA Superfund money was obtained to begin remedial planning activities at the site. In 1984, the site was listed on the EPA NPL. Subsequently, the EPA money was allocated to initiate remedial planning activities at the site.

The RI was conducted between the summer of 1983 and April 1988. The RI focused on the collection of data relevant to the evaluation of site environmental quality conditions, the assessment of public health and environmental risks, and the determination of the need for site remediation. A Final Remedial Investigation Report was issued on April 8, 1988. A combination notice letter and request for information was sent to potentially responsible parties on May 30, 1985.

Basis for Taking Action

Contaminants

The major contaminants of concern identified in the Record of Decision (ROD) include 1,1 dichloroethene, trichloroethene, benzene, methylene chloride, tetrachloroethylene, and nickel. The pathway for contaminant migration was found to be groundwater.

Many of the substances detected in groundwater had also been detected in leachate samples. Leachate existed at the surface in seeps and a pond. Exposures to leachate, or contaminated groundwater are associated with significant human health risks, due to exceedance of EPA's risk management criteria for either the average or the reasonable maximum exposure scenarios. Potential risks associated with exposure to groundwater are attributed to the presence of a variety of VOC contaminants that exist at concentrations that exceed State and Federal MCLs.

IV. Remedial Actions

Remedy Selection

The ROD for the Mid-State Disposal Site was signed on September 30, 1988. The ROD selected the following remedy:

1. A landfill cap which meets the requirements of Chapter NR 500 of the Wisconsin Administrative Code (WAC)
2. An active gas extraction system and condensate collection system
3. Improvements to site drainage
4. An alternate water supply (AWS) to nine residences and farms bordering the site.
5. Site monitoring for groundwater, surface water, and landfill gas
6. Off-site treatment of leachate
7. Site fencing and sign posting for security
8. On-site road construction
9. Institutional controls

A Consent Decree in the matter of United States of America v. Mid-State Disposal, Inc., et al., Docket No. 89-C-1017-S, U.S. District Court, W.D. Wisc. (1990) was entered into on March 28, 1990; whereby the agreement allowed for the Remedial Design/Remedial Action (RD/RA) to be performed by the Settling Defendants and oversight of such RD/RA by EPA and WDNR.

Remedial action objectives (RAOs) were identified in the Feasibility Study as:

1. Prevent public contact with landfill contents and lagoon wastes.
2. Prevent ingestion of groundwater with compounds exceeding Wisconsin Administrative Code (WAC) NR140 standards and 10^{-6} cancer risk levels from existing and potential future wells.
3. Prevent migration of hazardous compounds, which would cause groundwater concentrations at the site boundary to exceed cleanup goals (WAC NR140 standards and 10^{-6} cancer risk levels).

- Prevent future discharge of contaminated groundwater to surface water, which would cause the surface water to exceed Federal water Quality Criteria.
- Prevent surface water discharge of ponded leachate that would cause the surface water to exceed Federal Water Quality Criteria

The selected remedy met the RAOs as discussed below:

The selected alternative was considered to be protective of human health and the environment. The fencing, institutional controls, and improved cover systems would provide protection from direct contact with the contaminated materials. Capping of the landfills and lagoon would reduce infiltration from precipitation and significantly reduce the migration of contaminants into the groundwater and surface water systems. Leachate collection and off-site treatment would prevent direct contact with leachate and potential discharge of leachate to nearby surface waters.

The AWS would protect the public from the threat of potential exposure to contaminated groundwater. Monitoring of the groundwater and surface water would identify any failures of the containment system proposed to be installed at the landfill. Should elevated levels of contaminants be detected, additional corrective measures would be taken to abate any threat. Data indicated that contaminated groundwater existed only within the legal boundaries of the site. The threat to nearby residences was considered to be low. As a result of the AWS and the new soil/clay caps proposed in the selected remedy, the threat was determined to be sufficiently addressed. Consequently, pumping and treatment of groundwater for contaminant removal was not cost effective.

Full ARARs compliance will be achieved over time by landfill closure, which would be protective of human health and be cost-effective. The need to collect additional information to facilitate the RD was recognized in the ROD. A pre-design study was completed in 1991. The RD was completed in 1993.

A sufficient AWS source was not able to be located. Further, the AWS study concluded that current drinking water sources are not being impacted by the site. The ROD was amended on August 4, 1995 such that no AWS would be provided, with a contingency plan for point-of-use treatment systems in the event that a degradation of water quality is demonstrated. Long term monitoring at the site will continue for 30 years. The amended remedy, i.e., no AWS, in conjunction with the implementation of the remaining elements of the selected remedy, meets the RAOs discussed above.

Remedy Implementation

The Remedial Action construction was implemented in two phases. Phase I was completed in 1993; Phase II was completed in 1994. Phase I consisted of the following:

1. Placement of a final cover on the Old Mound and Interim landfills
2. Installation of the leachate and gas condensate collection systems
3. Installation of the gas extraction system
4. Implementation of the institutional controls
5. Off-site borrow source earthwork to import material for construction of the landfill and sludge lagoon covers
6. Placement of backfill and temporary cover on the sludge lagoon

Phase II consisted of the following:

1. Placement of the final cover on the sludge lagoon
2. Seeding of the entire site

STS Consultants, Ltd. (STS) was retained by the lead settling defendant to perform construction management, contract administration, and field and laboratory testing as required to document Remedial Actions at the Mid-State site. A registered Professional Engineer from STS was present at the landfill on a near full-time basis, acting as Construction Manager and Certifying Engineer, performing field engineering duties, coordinating and overseeing construction quality control/quality assurance activities, and performing contract administration. A representative of the WDNR was present on-site approximately 75 percent of the construction period. The WDNR was acting as Oversight Contractor on behalf of the USEPA.

A Senior Technician from STS was also present at the landfill and borrow sites on a full-time basis during the clay cover construction to perform field density tests, document clay thicknesses, and to gather soil samples for laboratory testing. An additional Field Technician from STS was present at the landfill site on a full-time basis during the construction period, through topsoil placement on the sludge lagoon, to monitor and document installation of the leachate and gas condensate collection system, the gas extraction system, the sludge lagoon cover component, and the landfill soil cover. After the soil components and infrastructure work was completed, a Field Technician or Construction Manager made periodic inspections of the site to monitor the seeding operations and maintenance of the erosion control measures. The periodic inspections continued through the establishment of the vegetative growth.

The construction documentation program included field and laboratory testing in substantial conformance with the requirements outlined in the ROD Construction Quality Assurance (CQA) Plan, as well as applicable provisions of Chapter NR 516 WAC. The STS field personnel maintained field logbooks, completed inspection data sheets for all inspections performed, and completed daily summary reports to document the observed daily activities. In addition, a photographic record of the Remedial Action work was maintained.

On several occasions during the course of construction, the observations of STS personnel indicated that construction defects or departures from the approved plans existed. Similarly, on several occasions, the contractor brought to the attention of STS personnel, items of construction that required additional work or construction procedural modifications to meet the design intent. These items were resolved and/or corrected in the normal course of construction through the cooperation of the contractor, agency oversight personnel, and the certifying engineer. Accordingly, problem identification and corrective measures reports were not filled out, which was a technical departure from the CQA Plan.

In general, the Remedial Actions were constructed and documented in accordance with the approved plans and specifications. Several deviations from the approved plans and specifications were made during the course of construction in response to site conditions. These deviations were resolved as discussed above. Three exceptions include the following:

1. The frost protection/vegetative support layer material on the sludge lagoon was placed in a single 18-inch lift rather than the 8-inch loose lifts required by the Technical Specifications. In addition, during placement of these materials, test pits were excavated in the

placed material to verify compliance with the approved plans and specifications. In one of the four test pits, a stone was found which was determined to be out of the specified limits for the materials.

2 The central header pipe on the sludge lagoon gas extraction piping was changed from solid high density polyethylene (HDPE) pipe to perforated HDPE pipe. The change was a modification to the design to better facilitate drainage of gas condensate from the header pipe in the event of settlement in the areas of the header pipe.

3. After placement of the seed and mulch on the site, the seeded areas were not watered. Approximately six weeks after beginning of the seeding operations, natural rainfall occurred, thereby initiating the seed germination.

The Remedial Action systems were tested for operation integrity and found to comply with the intent of the Remedial Design. The initial operational experience of the gas extraction system indicated that there was insufficient gas generation in the landfill to sustain a continuous flare. The operation of the flare was modified from a continuous flame operation to a fully automated intermittent flame operation.

Written acceptance of the components of the Remedial Action work was given to the contractor by the certifying engineer under the Certificate of Substantial Completion. The Certificate of Substantial Completion was issued June 6, 1994. The site achieved construction completion status when the Preliminary Closeout Report was signed on September 22, 1994

System Operation/Operation and Maintenance

The lead settling defendant has contracted with STS Consultants, Ltd. (STS) to perform site operation and maintenance (O&M). The work is being conducted in accordance with the O&M Plan. The O&M plan incorporates all EPA and State quality assurance and quality control procedures and protocols.

During the long-term remedial actions at the site, O&M requirements for the Mid-State Disposal site include:

- 1 periodic (currently semi-annual) mowing and inspections of the final cover system;
- 2 routine maintenance and monitoring of the leachate seep and gas condensate collection system;
- 3 routine maintenance and monitoring of the gas extraction and treatment system;
- 4 maintenance of the groundwater and gas monitoring network
- 5 periodic sampling and testing of the groundwater monitoring wells and gas probe wells;
- 6 periodic sampling of nearby residential water supply wells;
- 7 periodic sampling and testing of the surface water .

Table 2 presents a comparison of estimated and actual annual O&M expenditures. This information was furnished by STS Consultants. The amounts in Table 2 do not include laboratory analytical services nor leachate treatment as costs for these services were incurred directly by the settling defendant.

Table 2. Comparison of estimated and actual annual O&M costs.

O&M Period	Estimated Budget	Expended Budget	Comments
12/06/98 to 12/30/99	\$105,000	\$103,000	
01/01/00 to 12/30/00	\$111,000	\$89,000	
01/01/01 to 12/30/01	\$ 102,000	\$96,000	
01/01/02 to 12/30/02	\$ 103,000	\$ 65,000	
01/01/03 12/30/03	\$105,000	\$112,000	Additional costs were incurred in 2003 for completion of the second Superfund 5-year Review process.
Totals	\$526,000	\$465,000	

V. Progress Since the Last Five-Year Review

This is the second five-year review for the site. The first five-year review, which was completed in January 1999, found that the remedies at the site remained protective of human health and the environment. The first five-year review identified a number of non-critical issues and provided a number of recommendations. The following table lists those recommendations along with the responses.

Table 3: Recommendations of First Five-year Review and Follow-up Actions

Recommendations	Follow-up
More frequent mowing of vegetation on cover systems	Semi-annual mowing initiated in 2000. Reduced thistle and wild raspberry growth observed in subsequent inspections. Woody vegetation removed.
Impact of potential root growth from vegetation needs to be evaluated	Research by STS indicated that potential for root penetration through landfill covers existed if woody vegetation/thistle allowed to persist. Research also indicated that more frequent moving and interruption of thistle life cycle most feasible control.
Modification to portion of sludge lagoon berm to address sloughing	Soil replaced, recompact, topsoil placed, & seeded (6/2000). No sloughing observed in 10/2000. Area is closely monitored for soil movement. Minor sloughing of limited extent observed during 10/ 2003 5-year inspection.
Fill depressions around pipe penetrations in covers	Depressed areas filled, compacted & seeded in 2000. Depressions were not observed during Oct 2003 5-year site inspection
Modification of flexible connections on gas extraction wells to relieve stress	Modifications were completed during 2000 field season.
Bring monitoring wells into compliance with WAC NR141	Various repairs reported in 2000. Some deficiencies observed during Oct 2003 5-year site inspection.
Improvements to mechanical & electrical systems: lockable electrical disconnects at lift stations, new hose for leachate pumping, heaters to control moisture & corrosion	New leachate pump-out hose installed (1998). Corrosion problems addressed. Manual operations switches repaired & sensor at Tank B repaired (1999). Lockable disconnects installed (2000).
More frequent cleaning & mowing of ditches, backfill & vegetate depressions	Ditches cleaned & repaired. Mowed periodically. During 10/2003 5-year inspection ditches were observed to be clean and in good condition.
Groundwater and contaminant transport modeling	Agreed during subsequent discussions & correspondence that this would not be required, but that the question as to whether to conduct modeling would be re-examined at the second 5-year review. Based on the review of current groundwater conditions in this five-year review, WDNR and U.S. EPA do not see a need for modeling at this time.
Modification of trigger mechanism used in lieu of AWS	Subsequent correspondence (3/10/2000, 1/30/2001) indicates that existing trigger mechanism is consistent with ROD Amendment.
Leachate generation modeling	Agreed during subsequent correspondence that this was not necessary. However, noted that actual leachate hauling is less than modeled, and recommendation made that hauling rates be monitored carefully.

In addition to the above, changes in site operations that have been implemented since the first five-year review, include

- direct emission of actively extracted landfill gases without flaring (1999);
- a pilot study of passive venting of landfill gases from the gas extraction wells has been conducted (2001-3).

In a proposal dated January 15, 1999, STS requested approval for a pilot program of passive gas venting, with direct discharge from 23 gas extraction well head locations, 11 gas extraction trench head locations, and the sludge lagoon drip leg riser. Well head modifications to conduct the pilot included disconnecting the flexible connectors between the well heads and distribution risers, affixing a screen and positioning the top section downward so that

precipitation would not enter the system. An expanded air monitoring program, including monitoring for methane, carbon dioxide and oxygen at the discharge points, ambient air at points on the site and at the property boundaries, gas probes, and nearby residences was implemented. Groundwater monitoring, in addition to the on-going remedial action monitoring, consisted of four quarters sampling for volatile organic compounds (VOCs) at two select well locations, MW-10 and MW-24S to assess whether groundwater quality would be impacted by a switch to passive gas venting.

The results of the pilot study from January 2001 to March 2002 were reported to the agencies in a report dated July 17, 2002. Additional data was provided and reviewed in STS' February 2004, Ten-Year Report. No methane detects were reported in the perimeter gas probes, at ambient air monitoring points or in nearby residences. Methane levels at the discharge points of the gas extraction wells did increase substantially, with a maximum of 62.3% at Gas Extraction Trench (GET)-9 in 2003. This most likely reflects a transition in the waste mass from an aerobic environment under the influence of the active gas extraction to an anaerobic environment.

VI. Five-Year Review Process

Administrative Components

WDNR and U.S. EPA staff met with representatives of the Weyerhaeuser Corporation on October 6, 2003 to notify them of the initiation of the second five-year review. This five-year review for the Mid-State Disposal Site was conducted by Eileen Kramer of the WDNR.

From October 6, 2003 to May 2004, the reviewer established a review schedule, which included

- Community Involvement;
- Document and Data Review;
- Site Inspection;
- Local Interviews; and
- Five-Year Review Report Development and Review.

Community Involvement

Activities to involve the community in the five-year review included a public notice prepared by the WDNR and published in two local newspapers that a five-year review was to be conducted at the Mid-State Disposal Site. The notice invited members of the public to submit any comments to the reviewer at WDNR. There were no responses to the public notice.

Three interviews with members of the public were conducted, two with residents directly south of the site and one with a Town of Cleveland official. None of the interviews revealed any concerns. In the absence of residents at home, printed notices of the five-year review were left at three other nearby homes. No response was received from the residents thus notified.

Document Review

This five-year review included a review of relevant documents including the Record of Decision (ROD), the ROD Amendment, operations and maintenance (O&M) records and monitoring data (See Attachment 3). Applicable groundwater cleanup standards were reviewed.

Data Review

Gas Extraction System

Gas extraction system data was reviewed in the STS Remedial Action Monitoring Reports Nos. 59, 60, 61 and Progress Report No. 63. As proposed by STS and approved by the agencies, from March 2000 to February 2001, the gas extraction system was operated continuously with discharge of untreated gases to the atmosphere. Quarterly sampling of the emissions was conducted and analyses for non-methane VOCs performed. The analytical results were reviewed, and it is noted that emissions limits specified in State of Wisconsin Administrative Code NR445, Control of Hazardous Pollutants, were not exceeded.

Since beginning the passive gas venting pilot study in February 2001, measurements of landfill gases on the site have been taken monthly. Data reviewed includes gas monitoring results obtained at perimeter gas probes, ambient air monitoring stations on the covers and at the site perimeters, gas extraction wells, gas extraction trench head wells, and in four nearby residences. No methane detects were reported in the perimeter gas probes, at ambient air monitoring points or in nearby residences. Methane levels at the gas extraction well discharge points did increase substantially, to a maximum of 62.3% at GET-9 in 2003. This increase in methane generation most likely reflects a transition in the waste mass from an aerobic environment under the influence of active gas extraction to an anaerobic environment.

Based on leachate heads in the gas extraction wells, the screens of some wells, including GEW-1, GEW-3, GEW-15, GEW-17, and GEW-19, may be partially or completely submerged, potentially inhibiting gas venting via the gas extraction wells and possibly increasing the likelihood of off-site migration. It was a condition of EPA's approval letter dated January 30, 2001, that passive operation should allow venting to the atmosphere from each landfill gas well. STS attempted to determine the cause of the leachate accumulation in these wells and others in 1999, and reported they were not able to make a determination because of the influence of the active extraction system. Therefore, another evaluation should be attempted now with the system in passive mode. Actions should include pumping leachate out of wells with more than three feet in the well and measuring recharge to the well, as well as measuring changes at other nearby wells. A workplan should be prepared and submitted to the agencies for review.

During the October 2003 five-year review kick-off meeting, it was noted by EPA and WDNR that carbon dioxide and oxygen percentages appeared to be fluctuating in some of the perimeter gas probes. The agencies requested that an evaluation be done and reported. STS submitted a report in December 2003. Research indicated three possible reasons, natural seasonal fluctuation (aeration & microbial activity), CO₂ transport via groundwater, and methane oxidation. The data is not sufficient to determine conclusively which of the postulated mechanisms is controlling. Methane has not been observed in any of the perimeter gas probes since initiation of the passive venting pilot study.

Leachate Monitoring

A review of leachate quantities removed from the three collection tanks for off-site treatment and disposal indicates a decrease in volume of leachate collected. From 1994 to 1998 the average annual leachate volume removed was 156,697 gallons; from 1999 to 2003, 148,200 gallons.

According to leachate head measurements at the gas extraction wells, leachate in excess of three feet accumulates in GEW-1, GEW-3, GEW-15, GEW-17, and GEW-19. Historical data indicates that these wells have accumulated leachate at levels greater than three feet at least since November 1998. Leachate levels have decreased from greater to lesser than three feet at several wells, including GEW-4, GEW-7, GEW-18, and GEW-20.

Leachate quality data indicates that in the past five years pH has ranged from 5.5 to 7.3, without readily discernible long-term trends. Annual analyses for VOCs in the leachate have yielded very few unflagged detects, and none that exceed any standard. The low concentrations or no detections of VOCs in the leachate would tend to indicate minimal or no migration of additional VOCs from the waste mass to the groundwater. The quantity of leachate collected is consistent with good performance of the caps in reducing infiltration of precipitation as specified in the ROD.

Ground Water Monitoring

Ground water monitoring has been conducted at the Mid-State Disposal Site since the early 1980s. Currently there are 35 groundwater monitoring wells at the site. Eighteen wells are sampled as part of the long term groundwater monitoring program. Seven wells are monitored as trigger wells for implementation of water treatment at nearby residential wells. Water levels are measured at all monitoring wells during each semi-annual event.

For this report the Shallow Groundwater Contour Map, March 24, 2003; and the Deep Groundwater Contour Map, March 24, 2003, developed by STS Consultants were reviewed. The groundwater divides described in the background section of this document remain. One divide trends north south parallel to and east of the eastern edge of the Old Mound. The other divide runs approximately east-west, south of the Old Mound. Groundwater contour maps developed based on water levels in the shallow water table wells and piezometric elevations in the deeper wells, are similar. See Figures 3 and 4 in Attachment 1.

Data tables in the Remedial Action Monitoring Reports Nos. 59, 60, 61 and Progress Report No. 63 were reviewed. The WDNR electronic data base of groundwater data was also reviewed and used to generate summary reports.

Trigger wells for implementation of water supply treatment as designated in the ROD Amendment are:

MW-6	Western perimeter of site
MW-17	East of the Old Mound
MW-18	East of the Old Mound
MW-19	South of the site
MW-23	Southeast of the Old Mound
MW-29	Southeast of the Old Mound
MW-30	Southwest perimeter of site

Monitoring well MW-6 is sampled semi-annually and has exceeded the NR140 PAL for benzene consistently, although results are estimated due to laboratory qualifiers. Other VOCs have been detected, at concentrations less than PALs. The closest residence west of the site is more than 2000 feet. There are no other monitoring wells located between Monitoring Well MW-6 and the residences directly to the west.

MW-18 is located between the waste areas and the residential supply well RW-1834. Tetrachloroethylene (PCE) has been detected two times in the past five years in MW-18 at levels that attain or exceed the PAL. No other VOC detects are reported for semi-annual samples collected during the past five years.

Trigger wells that have had no VOC detects at or greater than PALs are MW-17, MW-19, MW-23, MW-29 and MW-30.

The residential well, RW-1834 has had PAL exceedences for benzene in four sampling rounds during the last five years. Other VOCs detected at less than PALs are toluene, 1,1,1,2 tetrachloroethane (1,1,1,2-TCA), ethylbenzene, xylene, 1,2,4 trimethylbenzene, and naphthalene. The resident reportedly uses a gasoline powered compressor to operate his supply well. All the VOCs detected, but one (1,1,1,2-TCA), are associated with gasoline. PALs were exceeded for the indicator parameters hardness and alkalinity for almost all rounds in the past five years. MW-22D, located approximately 200 feet east of the Old Mound and 900 feet northwest of RW-1834 has had consistent detects of benzene, although concentrations have not exceeded the PAL since 2001. VOC data is not adequate to attribute impact at the supply well to the landfill with any certainty, however, this potential should be further evaluated.

At residential well RW-1707, located southwest of the site, there have been three laboratory-qualified detects of benzene in the past five years. There have been no detects of VOCs in the past five semi-annual rounds at this well. At RW-1813, there have been no detects of VOCs since March 1995.

South of the southeast corner of the Old Mound, RW-1763, had a detect of tetrachloroethylene greater than PAL, and laboratory-qualified detects of toluene and xylene less than PALs in March of 1999. During the April 2004 sampling event, there were laboratory-qualified detects of chloroform, toluene and tetrachloroethylene. Wisconsin PALs were exceeded for chloroform and tetrachloroethylene. Drinking water standards were not exceeded.

A new residential water supply well was constructed approximately May 1, 2004 on the parcel immediately east of RW-1763. A house is being built and is anticipated to be occupied by fall 2004. Because the parcel is within 1200' feet of a landfill, it was necessary for the owner to obtain a variance from the Wisconsin DNR. This variance was issued with the requirement that the well be cased to at least bedrock or 50 feet below ground surface, (whichever is greater).

The ROD Amendment which eliminated the requirement for an alternate water supply for area residences also reduced the number of residential wells to be sampled on a long-term basis. The 5 residential wells that were eliminated from the long-term sampling had not shown any significant concentrations of contaminants in the previous six rounds of sampling and based on their location, were not expected to be impacted by the site. Four of these residential wells are located southwest of the site. Since these wells have not been sampled for about 10 years, it is recommended that the southwestern residential well nearest to the site (RW-1677) be

sampled to confirm that the reasoning behind the previous determination that these wells would not be impacted is still accurate. The other well not currently being sampled (RW-1861) is downgradient of Residential Wells RW-1813 and RW-1834. Since these 2 wells are being sampled and are safe to use, there is not a need to sample RW-1861 at this time.

For purposes of evaluating groundwater response to the transition from active gas extraction to passive venting, it was required that MW-10 and MW-24S be sampled quarterly. MW-24S has had no detects of VOCs since June 2001. For the first ten quarterly rounds since the beginning of the passive venting pilot, no VOCs were detected in MW-10. The last reported round in September 2003, had laboratory-qualified PAL detects for trichloroethene and tetrachloroethylene. Consequently, quarterly sampling at MW-10 should continue.

In general, VOC concentrations across the site are low, with only one monitoring well having NR140 ES exceedences. From 1999 to 2003, four monitoring wells, MW6, MW10, MW22D, and MW24S, have had PAL exceedences. Since January 1999, MW-22D has had ES exceedences for tetrachloroethylene, vinyl chloride, and trichloroethylene. See VOC summary report in Attachment 3. Time versus concentration plots of these substances in MW-22D show clear downward trends. See Figures 1 to 3 in Attachment 3. This data supports the expectation conceptualized in the ROD that groundwater contamination would attenuate. All of the residential wells that are currently being sampled are safe for residents to use.

Surface Water Monitoring

Since 1994 surface water has been sampled from four locations. Current sampling frequency is semi-annual. Two sample locations are in a drainage ditch that runs along the former railroad bed at the northwest corner of the site. The former railroad right of way is now an all-terrain vehicle trail. Two other sample locations are on Rock Creek, which runs from north to south, approximately one-half mile from the site. One sample location is upstream of the site; and one is downstream.

Data tables from 1999-2003 were reviewed. The up-gradient drainage ditch sample collection location has been reported to be dry since 1996 and, therefore, no samples have been collected. The drainage ditch sample collection point immediately west of the site has not generally been observed to have concentrations of metals or indicator parameters greater than background. In Rock Creek, concentrations of heavy metals and indicator parameters do not vary significantly between the upstream (background) and downstream sample collection locations.

The landfill caps and leachate collection system appear to be minimizing discharge of contaminants to the nearby surface waters.

Cap System Survey

In December 2003, the consultant for the PRP completed a topographic survey of the cover systems on the Old Mound and Interim Landfill and compared elevations to data from 1993. There are two areas of unanticipated results. Along the eastern edge of the Old Mound 2003 elevations are greater than 1993 elevations by 0.6 to 3.9 feet. The consultant indicates that this may be a result of misalignment of horizontal coordinates for survey points. At the southwest corner of the Interim Landfill two survey points show higher elevations in 2003 than in 1993. The consultant reports that this may be due to placement of excess soil related to nearby on-site road construction. For both cover systems, based on 2003 measurements, positive

water drainage off the caps is maintained and it does not appear that modifications are needed. However, to verify that actual mass movement is not occurring, it is recommended that another survey of the Old Mound and Interim Landfill be done two years from completion of this report,

Settlement of the sludge lagoon is evaluated annually by measurement of elevations at 15 settlement hub monuments set in the top of the lagoon cover system. Elevation decreases from construction in 1994 to 2003 range from 0.8 feet to 1.8 feet. Based on current hub elevations, there are no significant areas of depression in the top. The consultant reports that a small area in the north central part of the lagoon cover periodically shows signs of water having been ponded. This area was first observed in 1999, and significant changes in its size or character have not been reported since. This area should continue to be measured and characterized annually during the hub survey. Any significant changes should be reported and a determination made if any action is needed.

Institutional Controls

The ROD calls for institutional controls to prevent exposure to contaminants on the site. The proposed institutional controls were to control soil excavation and on-site well installation. The United States v. Mid State Disposal, Inc. Consent Decree, Section VI, Performance of Work, Conveyance of Facility section requires Mid-State Disposal Inc. to file these institutional controls in a deed restriction. Mid State Disposal Inc. has never placed the deed restrictions on the property that they agreed and were bound to do pursuant to the Consent Decree. At the present time, lack of a deed restriction is not a human health concern as the ongoing remedy at the site and its listing on the NPL limits use of the property. U.S. EPA has contacted Mr. Vernon Verjinsky, who signed the U.S. v. Mid State Disposal Inc. Consent Decree on behalf of Mid State Disposal Inc. Mr. Verjinsky has indicated to U.S. EPA his willingness to work with U.S. EPA and file the necessary notice of consent decree and institutional controls with the Marathon County, Wisconsin Register of Deeds.

Wisc. Adm. Code, NR812, an applicable or relevant and appropriate requirement (ARAR) is also an institutional control and does not allow extraction wells within 1200 feet of a landfill, without a variance. Issuance of the variance includes a hydrogeologic review of the setting and frequently requires special well construction. These requirements serve to protect potential human receptors of contaminated groundwater

Site Inspection

A site inspection was conducted on October 7, 2003, by the U.S. EPA Remedial Project Manager (RPM) and the WDNR Project Manager (PM) (See Attachment 4). The purpose of the inspection was to assess the protectiveness of the remedy, including the maintenance and operation of the leachate collection system, gas vent system and flare, the integrity of the caps on the three waste areas, the fencing and the condition of the surface water drainage systems and monitoring wells. A second field inspection was conducted on January 15, 2004

No significant problems were identified regarding the caps, the leachate collection system, the gas venting system and flare, the monitoring network, and the perimeter fencing. A minor area of sloughing near the southeast corner of the sludge lagoon was observed. Repair is planned for 2004 and will be checked during a future site visit.

Operation of the leachate pumps at the lift stations and leachate tanks was demonstrated satisfactorily in October 2003 during the site inspection. Control panels, manholes, loadout facilities, and alarm systems were observed to be in satisfactory condition.

During the October site inspection the U.S. EPA RPM observed that gaskets present in the HDPE gas extraction risers leading to the gas treatment system appeared somewhat deteriorated. On December 18, 2003, the consultant and contractors for the settling defendant replaced ten gaskets. The replaced gaskets were observed by the WDNR RPM during the January 2004 site inspection. Functionality of the active gas extraction and flare system was demonstrated to the WDNR PM during the January site inspection visit.

Drainage ditches surrounding the waste mounds were clean of debris, and no standing water was observed. The groundwater monitoring wells were all secure, labeled, and in substantially good shape. Because on-site monitoring wells are enclosed within a chain link fence, the use of a nylon locking strap is considered adequate security for the monitoring well caps. During the October site inspection, a number of minor concerns regarding maintenance of the groundwater monitoring wells were identified. STS has since reported that the necessary repairs and maintenance tasks have been performed. This has not been physically verified for all wells and will be during the next site visit. See Table 5 in Attachment 4.

Site security controls appear to be effective as there was no evidence of unauthorized access to the site (i.e. graffiti, tire tracks, campfires). Fencing around the site and around the gas treatment area was observed to be in good condition with padlocks in use on all gates. Roads were observed to be in good condition.

Interviews & Public Notice

On January 21, and 22, 2004, printed notices of the five year review were published in *The Record Review* and *The Mosinee Times*. The notice contained a brief summary of the site activities, the 5-year review process and a solicitation for public comment. No comments concerning the Mid-State Disposal Site or the 5-year review process were received during this period.

Interviews were also conducted with various parties connected to the site. On January 15, 2004, Mrs. Morris Krall, a resident immediately south of the site was interviewed by the WDNR RPM. Mrs. Krall expressed no concerns with the site. Mrs. Krall indicated that a new residence with a water supply well would be constructed immediately east of the Krall residence in the spring of 2004. The WDNR has issued a variance for construction of this supply well within 1200 feet of the site, with the stipulation that the well be cased to at least 50 feet in depth. Mr. Krall was interviewed on October 7, 2003, and he also indicated no concern regarding the site. Mr. Edward Schnelle, Town of Cleveland Chair has been interviewed. He expressed no concerns and indicated that he had not heard of any complaints from residents.

VII. Technical Assessment

Question A: Is the remedy functioning as intended by the decision documents?

The review of documents, ARARs, risk assumptions, and the results of the site inspection indicate that the remedy is functioning as intended by the ROD, as modified by the ROD Amendment. The capping of wastes within the landfills and sludge lagoon has achieved

the remedial objectives of minimizing the migration of contaminants to groundwater and surface water and preventing direct contact with, or ingestion of, contaminants in waste materials. Operation and maintenance of the caps, gas venting and leachate collection systems is, on the whole, effective. Concentrations of contaminants in groundwater are generally observed to be decreasing. Residential wells that are currently being sampled are safe for residents to use.

The ROD requires that institutional controls be placed on the site property to control soil excavation and on-site well installation. This portion of the remedy has not been implemented. Therefore, while the remedy has been constructed and is functioning as intended, the institutional controls must be implemented to address long-term concerns.

Question B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives (RAOs) used at the time of the remedy selection still valid?

Changes in Standards

ARARs that still must be met at this time and that have been evaluated include: Ch. NR 140, Wisconsin Administrative Code (Enforcement Standards and Preventative Action Limits); the Safe Drinking Water Act (SDWA) (40 CFR 141.11-141.16) [Maximum Contaminant Levels (MCLs), and MCL Goals (MCLGs)]; and ARARs related to monitoring, landfill capping, and operation of the leachate collection system and gas extraction system.

Site groundwater cleanup levels were based on U.S. EPA MCLs or Wisconsin Ch. NR140 (October 1985) ES, whichever was most stringent. Where there were no regulatory standards, risk-based data was used. There have been a number of changes in NR140 since the ROD was written in 1988. For each of the contaminants identified as a major contaminant of concern, the new NR140 ES is greater than or the same as the previous standard or risk-based level. Therefore, compliance with the previously established cleanup levels can be considered to be protective.

Changes in groundwater standards are as follows:

Table 4 - Changes in Chemical Specific Standards

Contaminant	Media	Site Cleanup Level (ug/l)	Standard (ug/l)		Source
1,1 Dichloroethene	Ground-water	.24	Previous	.24	Wisc. NR140 ES
			New	7	Wisc. NR140 ES
Trichloroethene	Ground-water	1.8	Previous	1.8	Wisc. NR140 ES
			New	5	Wisc. NR140 ES
Benzene	Ground-water	.67	Previous	.67	Wisc. NR140 ES
			New	5	Wisc. NR140 ES
Vinyl Chloride	Ground-water	.015	Previous	.015	Wisc. NR140 ES
			New	.2	Wisc. NR140 ES
Tetrachloroethylene	Ground-water	1	Previous	1	Wisc. NR140 ES
			New	5	Wisc. NR140 ES
Nickel	Ground-water	15.4	Previous	15.4	Risk Based
			New	100	Wisc. NR140 ES

Methylene Chloride	Ground-water	5	Previous	5	Risk Based
			New	5	Wisc. NR140 ES

Vinyl chloride has been detected in several site monitoring wells during the long-term groundwater monitoring. Vinyl chloride had not been identified as a contaminant of concern (COC) in the ROD. It is expected that vinyl chloride would be detected at this point in time because it is a breakdown product of the two COCs, trichloroethene and tetrachloroethylene, which were originally identified in the ROD. The long-term groundwater monitoring component of the remedy is sufficient to address the presence of vinyl chloride along with the other contaminants and, therefore, no additional remedial action is required to meet the site RAOs other than continued monitoring and operation and maintenance.

There have been no changes in the ARARs that impose new standards affecting the protectiveness of the remedy.

Changes in Exposure Pathways, Toxicity, and Other Contaminant Characteristics

The exposure assumptions used to develop the Human Health Risk Assessment are considered to be conservative and reasonable in evaluating risk and developing risk-based cleanup levels. No change to these assumptions, or the cleanup levels developed from them is warranted. Direct contact exposure pathways have been eliminated by the waste cover systems, and the elimination of leachate seeps and ponded areas. The remedy is progressing as expected and it is expected that all groundwater cleanup levels will be met within approximately 30 years.

In summary, the exposure assumptions, and toxicity data are still valid, and cleanup levels established are protective.

Question C: Has any other information come to light that could call into question the protectiveness of the remedy?

In a recent discussion the EPA RPM indicated that hydraulic gradient analysis done by EPA indicates the possibility that residential well, RW-1834, may be impacted by groundwater leaving the landfill. Benzene has been detected in exceedence of the PAL on several occasions, but not in exceedence of the ES or MCL. Benzene has been observed in monitoring well MW-22D, which lies between the waste areas and the residential well. As previously discussed, the source of the benzene in RW-1834 may also be related to the use of a gasoline powered compressor used to operate the well.

In order to ensure protectiveness for residential wells in the area, the ROD Amendment for the site established a contingency plan. The contingency plan states that if a residential well sample exceeds a State of Wisconsin Enforcement Standard (ES), a second sample will be collected. If the second sample exceeds the ES and is unqualified, protective measures will be taken. In the case of residential well RW-1834, the PAL for benzene of 0.5 micrograms per liter (0.5ug/l) has occasionally been exceeded, however, the ES for benzene of 5 ug/l has never been exceeded. Therefore, the remedy is still considered protective based on the contingency plan contained in the ROD Amendment. Additional evaluation will be needed to assure the long-term protectiveness at the nearby residential well RW-1834.

There is no other information generated during the 5-year review process or other information that calls into question the protectiveness of the remedy.

Technical Assessment Summary

According to the data reviewed, and the site inspection, the remedy is substantially functioning as intended by the ROD, and the ROD Amendment. There have been no changes in the physical conditions of the site that would affect the protectiveness of the remedy. A comparison of groundwater data to NR140 standards and MCLs indicates that there is no current human health concern due to groundwater ingestion. There is no other information that calls into question the short-term protectiveness of the remedy.

VIII. Issue

Table 5 -- Issues

Issue	Affects Current Protectiveness	Affects Future Protectiveness
The occasional detection of benzene at NR140 PAL standards in nearby residential well RW-1834 will necessitate additional evaluation.	No	Possibly
A new residential water supply well has been constructed south of the site.	No	Possibly
There have been consistent exceedences of the NR140 PAL for benzene in monitoring well MW-6. Although downgradient residences are 2000 feet away, there is no monitoring well located between MW-6 and the residences that would detect whether there is potential for impact on these residences.	No	Possibly
Residential water supply wells southwest of the site are not currently sampled because previous groundwater sampling had not detected significant concentrations of contaminants. Since these wells have not been sampled in approximately 10 years, sampling should be conducted to verify the previous determination that these wells are not impacted by the site.	No	Possibly
The need for an institutional control to be implemented to control on-site soil excavation and well installation.	No	Yes
Standing leachate in excess of three feet in some gas extraction wells.	No	Possibly
As a pilot study, the gas extraction system is currently being operated in a passive gas venting mode.	No	No

Minor monitoring well maintenance needs. See table following Site Inspection Checklist in Attachment 4.	No	No
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IX. Recommendations and Follow-Up Actions

Table 6 – Recommendations and Follow-Up Actions

Issue	Recommendation	Party Respon-Sible	Over-Sight Agency	Mile-Stone Date	Affects Protectiveness Y/N	
					Current	Future
RW-1834	The agencies and representatives for the settling defendant should discuss the findings at RW-1834 and the agencies should determine what additional evaluation, sampling or modeling should be conducted.	Weyer-Haeuser	USEPA WDNR	April 2005	No	Pos- sible
New residen- tial well	The well should be sampled prior to its use for drinking water, and on a regular schedule thereafter.	Weyer-haeuser	USEPA WDNR	March 2005	No	Pos- sible
MW-6	Selected residential wells downgradient of MW-6 will be sampled to determine whether contamination has moved towards the residential wells to the west.	Weyer-haeuser	USEPA WDNR	Septem- ber 2005	No	Pos- sible
Wells SW of site	Residential well 1677, southwest of the site will be sampled to confirm previous findings that contamination is not moving towards the residential wells southwest of the site.	Weyer-haeuser	USEPA WDNR	Septem- ber 2005	No	Pos- sible
Institu- tional Control	Implement an appropriate institu-tional control to control future excavation and well installation on-site.	Midstate Disposal	USEPA WDNR	June 2006	No	Yes
Leach- ate in gas wells	Representatives for the settling defendant should submit a workplan to evaluate the cause of and remove the excess leachate standing in gas extraction wells.	Weyer-haeuser	USEPA WDNR	May 2005	No	Pos- sible

Passive gas vent pilot	The agencies will make a determination on whether the gas extraction system can be operated in a passive mode on a permanent basis	USEPA WDNR	USEPA WDNR	April 2005	No	No
Monitoring wells	Well maintenance has reportedly already been performed. Adequacy to be verified.	Weyerhaeuser	USEPA WDNR	June 2005	No	No

X. Protectiveness Statement

The remedy at Mid-State Disposal currently protects human health and the environment because the waste area caps, gas vent system and leachate collection system continue to function effectively and as intended. Access to the site is controlled, and groundwater and nearby residential wells are monitored as required. Data indicate reduced leachate production, and declining concentrations of contaminants in groundwater. Groundwater is expected to attain groundwater cleanup goals in approximately 30 years. In the interim, exposure pathways that could result in unacceptable risks are being controlled.

The remedy is considered protective in the short-term because there is no evidence that there is current exposure. However, in order for the remedy to be protective in the long-term, groundwater cleanup goals must be achieved and an institutional control on the site must be implemented to control on-site excavation and well installation. Additional residential well sampling will be performed to confirm that residential wells previously determined not to be impacted by the site, remain safe to use.

Long-term protectiveness of the constructed remedial action (cap, vent system, leachate collection) will be verified by continuing residential well, groundwater monitoring well and gas probe samples to fully evaluate potential migration of the groundwater contaminant plume and methane gas. Additional sampling and analyses will be completed until the ARARs are met. Current monitoring data indicate that the remedy is functioning as required to achieve groundwater cleanup goals.

XI. Next Review

The next five-year review for the Mid-State Disposal Site is required by August 2009, five years from the date of this review.

ATTACHMENTS

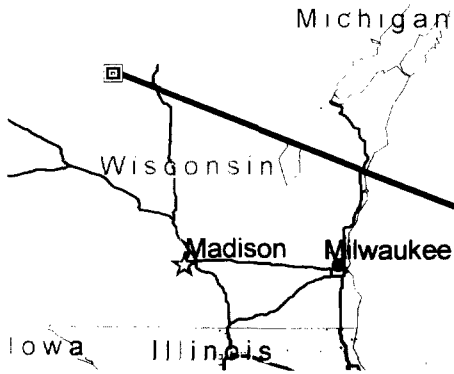
Attachment 1

Site Maps

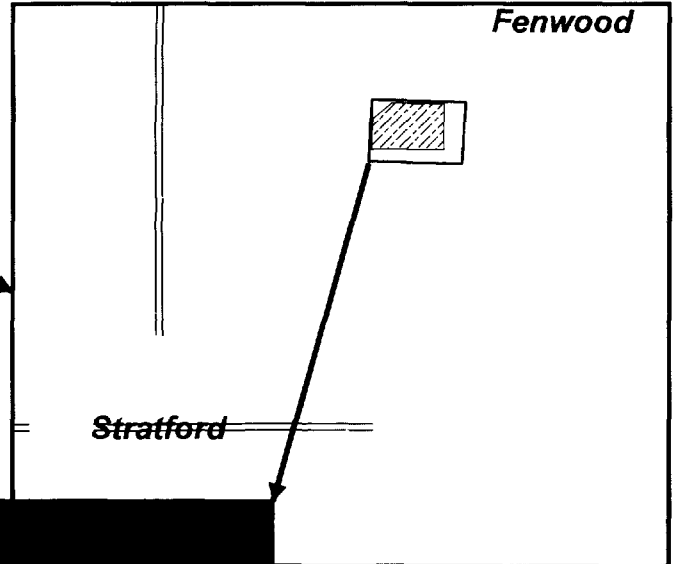
Figure 1

Mid State Landfill Superfund Site Marathon County, Wisconsin

1) State



2) Village of Stratford

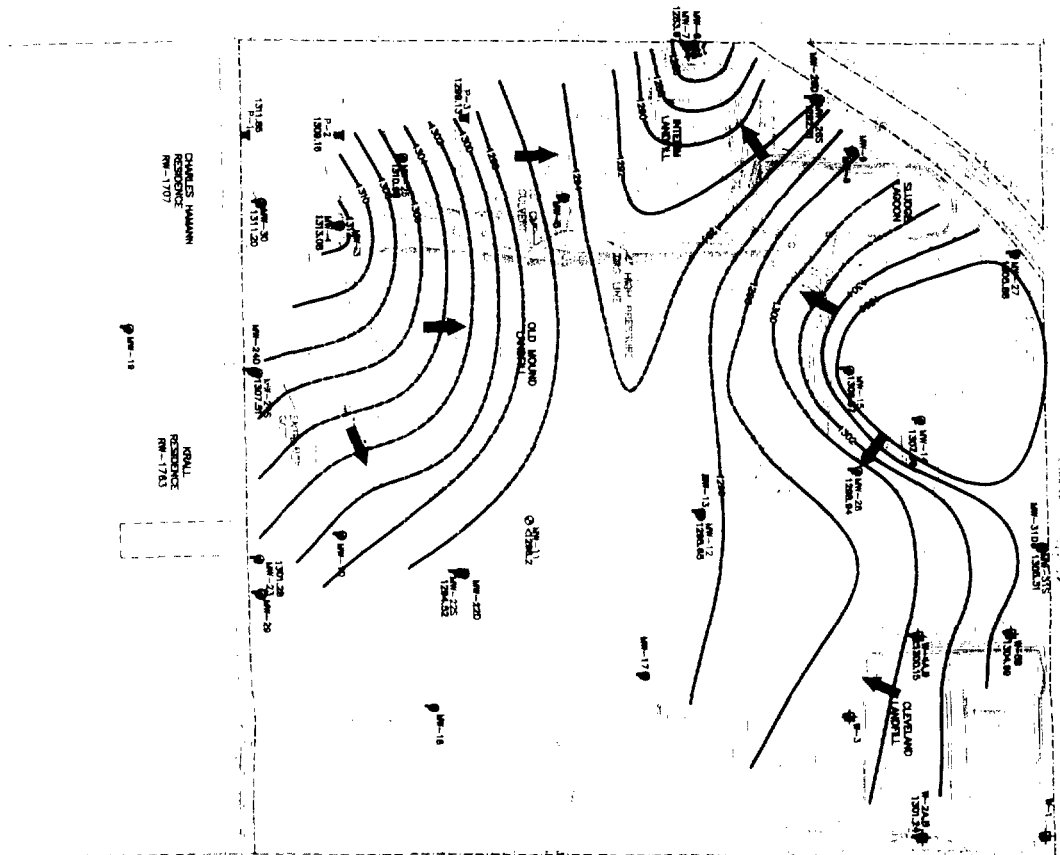


3) Mid State Landfill Superfund Site



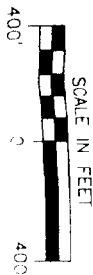
GEOS
Groundwater Evaluation and Optimization System

Plot created by David Wilson U.S. EPA Region V 4/19/2004
Image Date 4/5/1988



LEGEND

- INTERPOLATED GROUND WATER CONTOUR
- INTERFERED GROUND WATER CONTOUR
- GROUND SURFACE ELEVATION CONTOUR (1994)
- APPROXIMATE SITE BOUNDARY
- GROUNDWATER MONITORING WELL
- GROUNDWATER MONITORING WELL INSTALLED FOR REMEDIAL INVESTIGATION OR PREDESIGN STUDY
- GROUNDWATER MONITORING WELL INSTALLED PRIOR TO REMEDIAL INVESTIGATION
- GROUNDWATER MONITORING WELL INSTALLED FOR AHS
- INTERFERED GROUNDWATER FLOW DIRECTION



SHALLOW GROUNDWATER CONTOUR MAP
MARCH 24, 2003
MID-STATE DISPOSAL SITE
CLEVELAND TOWNSHIP, MARATHON COUNTY, WISCONSIN

DRAWN BY	PDS\LMD\CUH	DATE	12/18/03
CHECKED BY	DMV	DATE	12/18/03
APPROVED BY	TGW	DATE	12/18/03

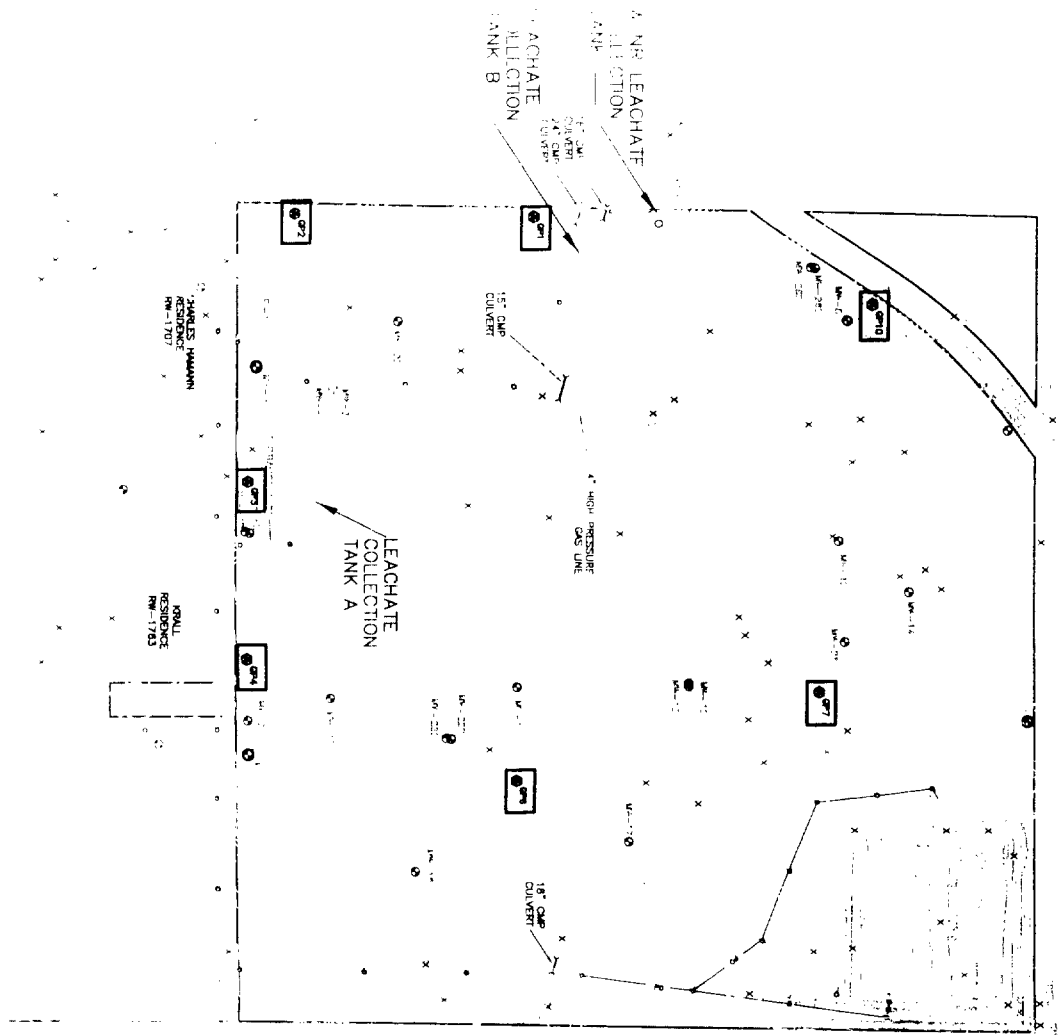
STS
STS Consultants
Consulting Engineer

PROJECT NO.
87317

DATE
5/8/317

AS NOTED

FIGURE NO.
8

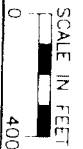



KARE JAMMON
 RESIDENCE
 NW-1834
 1834

ROBERT JAMMON
 RESIDENCE
 NW-1813
 1813

LEGEND

- GAS PROBE
- WELL INSTALLED FOR AWS
- GROUNDWATER MONITORING WELL INSTALLED FOR PRE-DESIGN STUDY
- LONG TERM MONITORING LOCATION



 <p> STS Consulting Engineers 5873171-1000 STS PROJECT FILE # G5184004 SCALE AS SHOWN DATE 1/26/04 </p>	GAS PROBE MONITORING LOCATION DIAGRAM MID-STATE LANDFILL WDNR LICENSE NO. 2812 STRATFORD, WISCONSIN		DRAWN BY WDB	DATE 1/26/04
			CHECKED BY TGW	DATE 1/26/04
			APPROVED BY TGW	DATE 1/26/04
			CARFILE	

Attachment 2

List of Reviewed Documents

MidStateDisposal
5 Year Review
Documents Reviewed

Final Remedial Investigation Report, Mid-State Disposal Site, Marathon County, Wisconsin, by CH2M Hill, April 8, 1988

Public Comment Feasibility Study Report, by CH2M Hill, July 15, 1988

EPA Superfund Record of Decision, 9/30/1988

EPA Superfund Record of Decision Amendment, August 4, 1995

Superfund Five-Year Review Report Mid-State Disposal Site, by US Army Corps of Engineers, St. Paul District, January 1999

Five Year Performance Evaluation Report, Mid-State Disposal Site, by STS Consultants, January 18, 1999.

Progress Report No. 59, Rounds 14/15 Remedial Action Monitoring Report, by STS Consultants, January 31, 2000

Progress Report No. 60, Rounds 16/17 Remedial Action Monitoring Report, by STS Consultants, January 15, 2001

Progress Report No. 61, Rounds 18/19, by STS Consultants, March 25, 2002

Passive Gas System Operation Pilot Study Report for the Mid-State Disposal Site , by STS Consultants, July 17, 2002

Addendum to the Passive Gas Operations Pilot Study Report, by STS Consultants, letter report dated December 9, 2003.

Progress Report No. 63/Ten-Year Report, by STS Consultants, February 3, 2004.

Attachment 3

Monitoring Data

*** License Selection:

2812 - MID-STATE DISPOSAL INC

*** Point ID Selections:

318 - PZ-3
320 - P-1
322 - MW-2
324 - MW-4
326 - MW-6
328 - MW-8
330 - MW-27
332 - MW-16D
334 - MW-13
336 - MW-11
338 - MW-17
340 - MW-20D
342 - MW-21S
344 - MW-24S
346 - MW-24D
348 - MW-23
350 - MW-22D
352 - MW-25
354 - MW-26D
358 - MW-30
362 - MW-31S
366 - STEINES 1677
370 - KAISER 1617
374 - EMENEKER 1558
702 - BECHER, RICHARD
704 - RW-1813 STOTMEI

319 - PZ-2
321 - MW-1
323 - MW-3
325 - MW-5
327 - MW-7
329 - MW-9
331 - MW-16S
333 - MW-18
335 - MW-10
337 - MW-12
339 - MW-20S
341 - MW-21D
343 - MW-14
345 - MW-15
347 - MW-19
349 - MW-22S
351 - MW-28
353 - MW-26S
356 - MW-29
360 - MW-31D
364 - RW-1707 HAMMAN
368 - KAFKA 1861
372 - KAISER 1593
701 - C1834-GINGERICH
703 - RW-1763 KRALL

*** Selected Sample Date Range:

Start Date: 01/01/1999 End Date: 12/30/2003

*** Only Detects are selected

*** Only Results > PAL/ACL are selected

*** Enforcement Standard Exceedances are Flagged at All Sample Points

*** Parameter Selections:

32101 - BROMODICHLOROMETHANE IN WHOLE WATER SAMPLE (UG/L)
32103 - 1,2-DICHLOROETHANE IN WHOLE WATER SAMPLE (UG/L)
32105 - DIBROMOCHLOROMETHANE IN WHOLE WATER SAMPLE (UG/L)
34010 - TOLUENE IN WHOLE WATER SAMPLE (UG/L)
34301 - CHLOROBENZENE IN WHL WTR SAMPLE (UG/L)

32102 - CARBON TETRACHLORIDE IN WHOLE WATER SAMPLE (UG/L)
32104 - TRIBROMOMETHANE IN WHL WTR SAMPLE (UG/L)
32106 - CHLOROFORM IN WHOLE WATER SAMPLE (UG/L)
34030 - BENZENE IN WHOLE WATER SAMPLE (UG/L)
34311 - CHLOROETHANE IN WHL WTR SAMPLE (UG/L)

*** Parameter Selections:

34413 - BROMOMETHANE IN WHL WTR SAMPLE (UG/L)
34423 - DICHLOROMETHANE IN WHL WTR SAMPLE (UG/L)
34488 - FLUOROTRICHLOROMETHANE IN WHOLE WATER SAMPLE (UG/L)
34501 - 1,1-DICHLOROETHYLENE IN WHL WTR SAMPLE (UG/L)
34511 - 1,1,2-TRICHLOROETHANE IN WHOLE WATER SAMPLE (UG/L)
34541 - 1,2-DICHLOROPROPANE IN WHL WTR SAMPLE (UG/L)
34566 - M-DICHLOROBENZENE IN WHL WTR SAMPLE (UG/L)
34668 - DICHLORODIFLUOROMETHANE IN WHOLE WTR SAMPLE (UG/L)
34699 - TRANS-1,3-DICHLOROPROPENE IN WHL WTR SAMPLE (UG/L)
38437 - 1,2-DIBROMO-3-CHLOROPROPANE IN WHL WTR SAMP (UG/L)
39180 - TRICHLOROETHYLENE (TCE) IN WHOLE WTR SAMPLE (UG/L)
77041 - CARBON DISULFIDE IN WHL WATER SAMPLE (UG/L)
77128 - STYRENE IN WHOLE WATER SAMPLE (UG/L)
77596 - DIBROMOMETHANE IN WHL WTR SAMPLE (UG/L)
78032 - METHYL TERT-BUTYL ETHER (MTBE), WHL WTR SMPL (UG/L)
78121 - XYLENE, O & P-, IN WHOLE WATER SAMPLE (UG/L)
81551 - XYLENE, O, M & P-, IN WHOLE WATER SAMPLE (UG/L)
81595 - METHYL ETHYL KETONE (MEK) IN WHL WTR SAMPLE (UG/L)
81710 - XYLENE, M-, IN WHOLE WATER SAMPLE (UG/L)

(Continued)

34418 - CHLOROMETHANE IN WHL WTR SAMPLE (UG/L)
34475 - TETRACHLOROETHYLENE IN WHOLE WATER SAMPLE (UG/L)
34496 - 1,1-DICHLOROETHANE IN WHOLE WATER SAMPLE (UG/L)
34506 - 1,1,1-TRICHLOROETHANE IN WHOLE WATER SAMPLE (UG/L)
34536 - O-DICHLOROBENZENE IN WHL WTR SAMPLE (UG/L)
34546 - TRANS-1,2-DICHLOROETHENE, TOTAL, IN WATER (UG/L)
34571 - P-DICHLOROBENZENE IN WHL WTR SAMPLE (UG/L)
34696 - NAPHTHALENE IN WHOLE WATER SAMPLE (UG/L)
34704 - CIS-1,3-DICHLOROPROPENE IN WHL WTR SAMPLE (UG/L)
39175 - VINYL CHLORIDE IN WHOLE WATER SAMPLE (UG/L)
45617 - 1,2-DICHLOROETHENES
77093 - CIS-1,2-DICHLOROETHENE, WHOLE WATER (UG/L)
77135 - XYLENE, O-, IN WHOLE WATER SAMPLE (UG/L)
77651 - 1,2-DIBROMOETHANE (EDB) IN WHOLE WATER SAMPLE (UG/L)
78113 - ETHYLBENZENE IN WHOLE WATER SAMPLE (UG/L)
78132 - XYLENE, P-, IN WHOLE WATER SAMPLE (UG/L)
81552 - ACETONE IN WHL WTR SAMPLE (UG/L)
81607 - TETRAHYDROFURAN IN WHOLE WATER SAMPLE (UG/L)
85795 - XYLENE, M & P-, IN WHOLE WATER SAMPLE (UG/L)

License: 2812 MID-STATE DISPOSAL INC FID: 737056320 West Central Region County: Marathon

Point ID	Point Name	WUWN	Point Type	Point Status	Gradient	Enf Std			
326	MW-6	GN580	WT Obs Well-Non Sub D	Active		N			
Sample Date	Parameter	Result	Amount	Units	Qual Code	LOD	LOQ	Rep Limit	QC1 QC2 QC3
03/25/1999	D 34030 BENZENE IN WHOLE WATER SAMPLE (UG/L)	1.000	(P)	ug/L		0.04	0.14	1	M M M
	34030 BENZENE IN WHOLE WATER SAMPLE (UG/L)	1.000	(P)	ug/L		0.04	0.14	1	M M M
	** Totals For All Detects **	Detect Count: 7	Total:	4.300					
09/23/1999	34030 BENZENE IN WHOLE WATER SAMPLE (UG/L)	1.000	(P)	ug/L		0.04	0.14	1	M M M
	** Totals For All Detects **	Detect Count: 5	Total:	3.600					
03/29/2000	34030 BENZENE IN WHOLE WATER SAMPLE (UG/L)	1.000	(P)	ug/L		0.04	0.14	1	M M M
	** Totals For All Detects **	Detect Count: 5	Total:	4.400					
09/14/2000	D 34030 BENZENE IN WHOLE WATER SAMPLE (UG/L)	1.000	(P)	ug/L		0.04	0.14	1	M M M
	34030 BENZENE IN WHOLE WATER SAMPLE (UG/L)	1.000	(P)	ug/L		0.04	0.14	1	M M M
	** Totals For All Detects **	Detect Count: 5	Total:	4.100					
03/28/2001	34030 BENZENE IN WHOLE WATER SAMPLE (UG/L)	.900	(P)	ug/L		0.04	0.14	1	M M M
	** Totals For All Detects **	Detect Count: 5	Total:	4.000					
09/11/2001	D 34030 BENZENE IN WHOLE WATER SAMPLE (UG/L)	.900	(P)	ug/L		0.04	0.14	1	M M M
	34030 BENZENE IN WHOLE WATER SAMPLE (UG/L)	.800	(P)	ug/L		0.04	0.14	1	M M M
	** Totals For All Detects **	Detect Count: 5	Total:	3.600					
03/13/2002	34030 BENZENE IN WHOLE WATER SAMPLE (UG/L)	.600	(P)	ug/L		0.04	0.14	1	M M M
	** Totals For All Detects **	Detect Count: 4	Total:	2.500					
09/24/2002	34030 BENZENE IN WHOLE WATER SAMPLE (UG/L)	.700	(P)	ug/L		0.04	0.14	1	M M M
	** Totals For All Detects **	Detect Count: 3	Total:	1.700					
03/26/2003	D 34030 BENZENE IN WHOLE WATER SAMPLE (UG/L)	.700	(P)	ug/L		0.04	0.14	1	M M M
	34030 BENZENE IN WHOLE WATER SAMPLE (UG/L)	.700	(P)	ug/L		0.04	0.14	1	M M M
	** Totals For All Detects **	Detect Count: 3	Total:	2.000					

Point ID	Point Name	WUWN	Point Type	Point Status	Gradient	Enf Std			
335	MW-10	GN584	WT Obs Well-Non Sub D	Active		N			

License: 2812 MID-STATE DISPOSAL INC FID: 737056320 West Central Region County: Marathon

 Point ID Point Name WUWN Point Type Point Status Gradient Enf Std
 335 MW-10 GN584 WT Obs Well-Non Sub D Active N (Continued)

Sample Date	Parameter	Result Amount	Units	Qual Code	LOD	LOQ	Rep Limit	QC1	QC2	QC3
09/23/1999	D 34475 TETRACHLOROETHYLENE IN WHOLE WATER SAMPLE (UG/L)	2.000	(P) ug/L		0.31	1.03	1	M	M	M
	D 39180 TRICHLOROETHYLENE (TCE) IN WHOLE WTR SAMPLE (UG/L)	.800	(P) ug/L		0.11	0.37	1	M	M	M
	39180 TRICHLOROETHYLENE (TCE) IN WHOLE WTR SAMPLE (UG/L)	.700	(P) ug/L		0.11	0.37	1	M	M	M

** Totals For All Detects ** Detect Count: 5 Total: 3.800

 Point ID Point Name WUWN Point Type Point Status Gradient Enf Std
 344 MW-24S GN257 WT Obs Well-Non Sub D Active N

Sample Date	Parameter	Result Amount	Units	Qual Code	LOD	LOQ	Rep Limit	QC1	QC2	QC3
03/13/2002	34423 DICHLOROMETHANE IN WHL WTR SAMPLE (UG/L)	1.000	(P) ug/L		0.13	0.43	1	M	M	M

** Totals For All Detects ** Detect Count: 1 Total: 1.000

 Point ID Point Name WUWN Point Type Point Status Gradient Enf Std
 350 MW-22D GN255 Piezometer-Non Sub D Well Active N

Sample Date	Parameter	Result Amount	Units	Qual Code	LOD	LOQ	Rep Limit	QC1	QC2	QC3
03/24/1999	34030 BENZENE IN WHOLE WATER SAMPLE (UG/L)	.700	(P) ug/L		0.04	0.14	1	M	M	M
	34475 TETRACHLOROETHYLENE IN WHOLE WATER SAMPLE (UG/L)	7.000	(E) ug/L		0.31	1.03	1	M	M	M
	39175 VINYL CHLORIDE IN WHOLE WATER SAMPLE (UG/L)	2.000	(E) ug/L		0.17	0.57	2	M	M	M
	39180 TRICHLOROETHYLENE (TCE) IN WHOLE WTR SAMPLE (UG/L)	7.000	(E) ug/L		0.11	0.37	1	M	M	M

** Totals For All Detects ** Detect Count: 11 Total: 30.300

09/23/1999	34030 BENZENE IN WHOLE WATER SAMPLE (UG/L)	.900	(P) ug/L		0.04	0.14	1	M	M	M
	34423 DICHLOROMETHANE IN WHL WTR SAMPLE (UG/L)	.600	(P) ug/L		0.13	0.43	1	M	M	M
	34475 TETRACHLOROETHYLENE IN WHOLE WATER SAMPLE (UG/L)	10.000	(E) ug/L		0.31	1.03	1	M	M	M
	39175 VINYL CHLORIDE IN WHOLE WATER SAMPLE (UG/L)	2.000	(E) ug/L		0.17	0.57	2	M	M	M
	39180 TRICHLOROETHYLENE (TCE) IN WHOLE WTR SAMPLE (UG/L)	10.000	(E) ug/L		0.11	0.37	1	M	M	M

** Totals For All Detects ** Detect Count: 11 Total: 37.700

License: 2812 MID-STATE DISPOSAL INC FID: 737056320 West Central Region County: Marathon

Point ID	Point Name	WUWN	Point Type	Point Status	Gradient	Enf Std			
350	MW-22D	GN255	Piezometer-Non Sub D Well	Active		N	(Continued)		
Sample Date	Parameter	Result	Amount	Units	Qual Code	LOD	LOQ	Rep Limit	QC1 QC2 QC3
03/29/2000	34030 BENZENE IN WHOLE WATER SAMPLE (UG/L)	.600	(P)	ug/L		0.04	0.14	1	M M M
	34475 TETRACHLOROETHYLENE IN WHOLE WATER SAMPLE (UG/L)	7.000	(E)	ug/L		0.31	1.03	1	M M M
	39175 VINYL CHLORIDE IN WHOLE WATER SAMPLE (UG/L)	2.000	(E)	ug/L		0.17	0.57	2	M M M
	39180 TRICHLOROETHYLENE (TCE) IN WHOLE WTR SAMPLE (UG/L)	7.000	(E)	ug/L		0.11	0.37	1	M M M
** Totals For All Detects **		Detect Count:	10	Total:	28.900				
09/14/2000	34475 TETRACHLOROETHYLENE IN WHOLE WATER SAMPLE (UG/L)	6.000	(E)	ug/L		0.31	1.03	1	M M M
	39175 VINYL CHLORIDE IN WHOLE WATER SAMPLE (UG/L)	1.000	(E)	ug/L		0.17	0.57	2	M M M
	39180 TRICHLOROETHYLENE (TCE) IN WHOLE WTR SAMPLE (UG/L)	6.000	(E)	ug/L		0.11	0.37	1	M M M
** Totals For All Detects **		Detect Count:	10	Total:	24.600				
03/28/2001	D 34475 TETRACHLOROETHYLENE IN WHOLE WATER SAMPLE (UG/L)	5.000	(P)	ug/L		0.31	1.03	1	M M M
	D 39175 VINYL CHLORIDE IN WHOLE WATER SAMPLE (UG/L)	2.000	(E)	ug/L		0.17	0.57	2	M M M
	D 39180 TRICHLOROETHYLENE (TCE) IN WHOLE WTR SAMPLE (UG/L)	6.000	(E)	ug/L		0.11	0.37	1	M M M
	34475 TETRACHLOROETHYLENE IN WHOLE WATER SAMPLE (UG/L)	5.000	(P)	ug/L		0.31	1.03	1	M M M
	39175 VINYL CHLORIDE IN WHOLE WATER SAMPLE (UG/L)	2.000	(E)	ug/L		0.17	0.57	2	M M M
	39180 TRICHLOROETHYLENE (TCE) IN WHOLE WTR SAMPLE (UG/L)	6.000	(E)	ug/L		0.11	0.37	1	M M M
** Totals For All Detects **		Detect Count:	9	Total:	24.300				
09/11/2001	34475 TETRACHLOROETHYLENE IN WHOLE WATER SAMPLE (UG/L)	6.000	(E)	ug/L		0.31	1.03	1	M M M
	39175 VINYL CHLORIDE IN WHOLE WATER SAMPLE (UG/L)	2.000	(E)	ug/L		0.17	0.57	2	M M M
	39180 TRICHLOROETHYLENE (TCE) IN WHOLE WTR SAMPLE (UG/L)	5.000	(P)	ug/L		0.11	0.37	1	M M M
** Totals For All Detects **		Detect Count:	8	Total:	21.900				
03/12/2002	D 34475 TETRACHLOROETHYLENE IN WHOLE WATER SAMPLE (UG/L)	5.000	(P)	ug/L		0.31	1.03	1	M M M
	D 39175 VINYL CHLORIDE IN WHOLE WATER SAMPLE (UG/L)	1.000	(E)	ug/L		0.17	0.57	2	M M M
	D 39180 TRICHLOROETHYLENE (TCE) IN WHOLE WTR SAMPLE (UG/L)	5.000	(P)	ug/L		0.11	0.37	1	M M M
	34475 TETRACHLOROETHYLENE IN WHOLE WATER SAMPLE (UG/L)	5.000	(P)	ug/L		0.31	1.03	1	M M M
	39175 VINYL CHLORIDE IN WHOLE WATER SAMPLE (UG/L)	.900	(E)	ug/L		0.17	0.57	2	M M M
	39180 TRICHLOROETHYLENE (TCE) IN WHOLE WTR SAMPLE (UG/L)	5.000	(P)	ug/L		0.11	0.37	1	M M M
** Totals For All Detects **		Detect Count:	7	Total:	17.300				

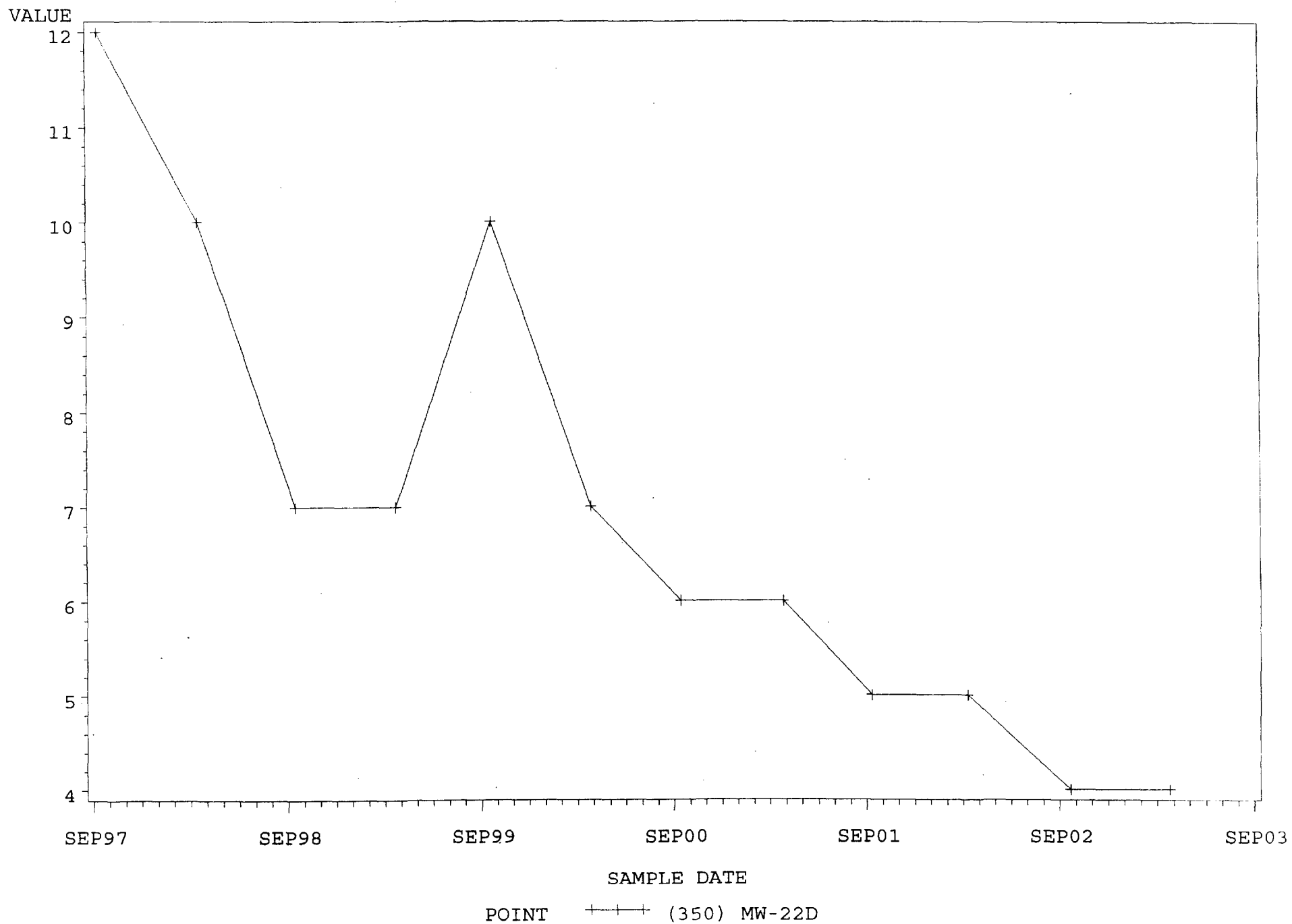
License: 2812 MID-STATE DISPOSAL INC FID: 737056320 West Central Region County: Marathon

Point ID	Point Name	WUWN	Point Type	Point Status	Gradient	Enf Std			
350	MW-22D	GN255	Piezometer-Non Sub D Well	Active		N	(Continued)		
Sample Date	Parameter	Result	Amount	Units	Qual Code	LOD	LOQ	Rep Limit	QC1 QC2 QC3
09/22/2002	34475 TETRACHLOROETHYLENE IN WHOLE WATER SAMPLE (UG/L)	4.000	(P)	ug/L		0.31	1.03	1	M M M
	39175 VINYL CHLORIDE IN WHOLE WATER SAMPLE (UG/L)	1.000	(E)	ug/L		0.17	0.57	2	M M M
	39180 TRICHLOROETHYLENE (TCE) IN WHOLE WTR SAMPLE (UG/L)	4.000	(P)	ug/L		0.11	0.37	1	M M M
** Totals For All Detects **		Detect Count:	7	Total:	17.300				
03/26/2003	34475 TETRACHLOROETHYLENE IN WHOLE WATER SAMPLE (UG/L)	5.000	(P)	ug/L		0.31	1.03	1	M M M
	39175 VINYL CHLORIDE IN WHOLE WATER SAMPLE (UG/L)	1.000	(E)	ug/L		0.17	0.57	2	M M M
	39180 TRICHLOROETHYLENE (TCE) IN WHOLE WTR SAMPLE (UG/L)	4.000	(P)	ug/L		0.11	0.37	1	M M M
** Totals For All Detects **		Detect Count:	7	Total:	16.400				
Point ID	Point Name	WUWN	Point Type	Point Status	Gradient	Enf Std			
701	C1834-GINGERICH	BK869	Private Well - Potable	Active		Y			
Sample Date	Parameter	Result	Amount	Units	Qual Code	LOD	LOQ	Rep Limit	QC1 QC2 QC3
03/30/2000	34030 BENZENE IN WHOLE WATER SAMPLE (UG/L)	1.000	(P)	ug/L		0.04	0.14	1	M M M
** Totals For All Detects **		Detect Count:	5	Total:	4.900				
03/29/2001	34030 BENZENE IN WHOLE WATER SAMPLE (UG/L)	2.000	(P)	ug/L		0.04	0.14	1	M M M
** Totals For All Detects **		Detect Count:	6	Total:	13.300				
09/12/2001	D 34030 BENZENE IN WHOLE WATER SAMPLE (UG/L)	.700	(P)	ug/L		0.04	0.14	1	M M M
	34030 BENZENE IN WHOLE WATER SAMPLE (UG/L)	.700	(P)	ug/L		0.04	0.14	1	M M M
** Totals For All Detects **		Detect Count:	5	Total:	3.600				
09/25/2002	D 34030 BENZENE IN WHOLE WATER SAMPLE (UG/L)	.700	(P)	ug/L		0.04	0.14	1	M M M
	34030 BENZENE IN WHOLE WATER SAMPLE (UG/L)	.700	(P)	ug/L		0.04	0.14	1	M M M
** Totals For All Detects **		Detect Count:	3	Total:	3.200				

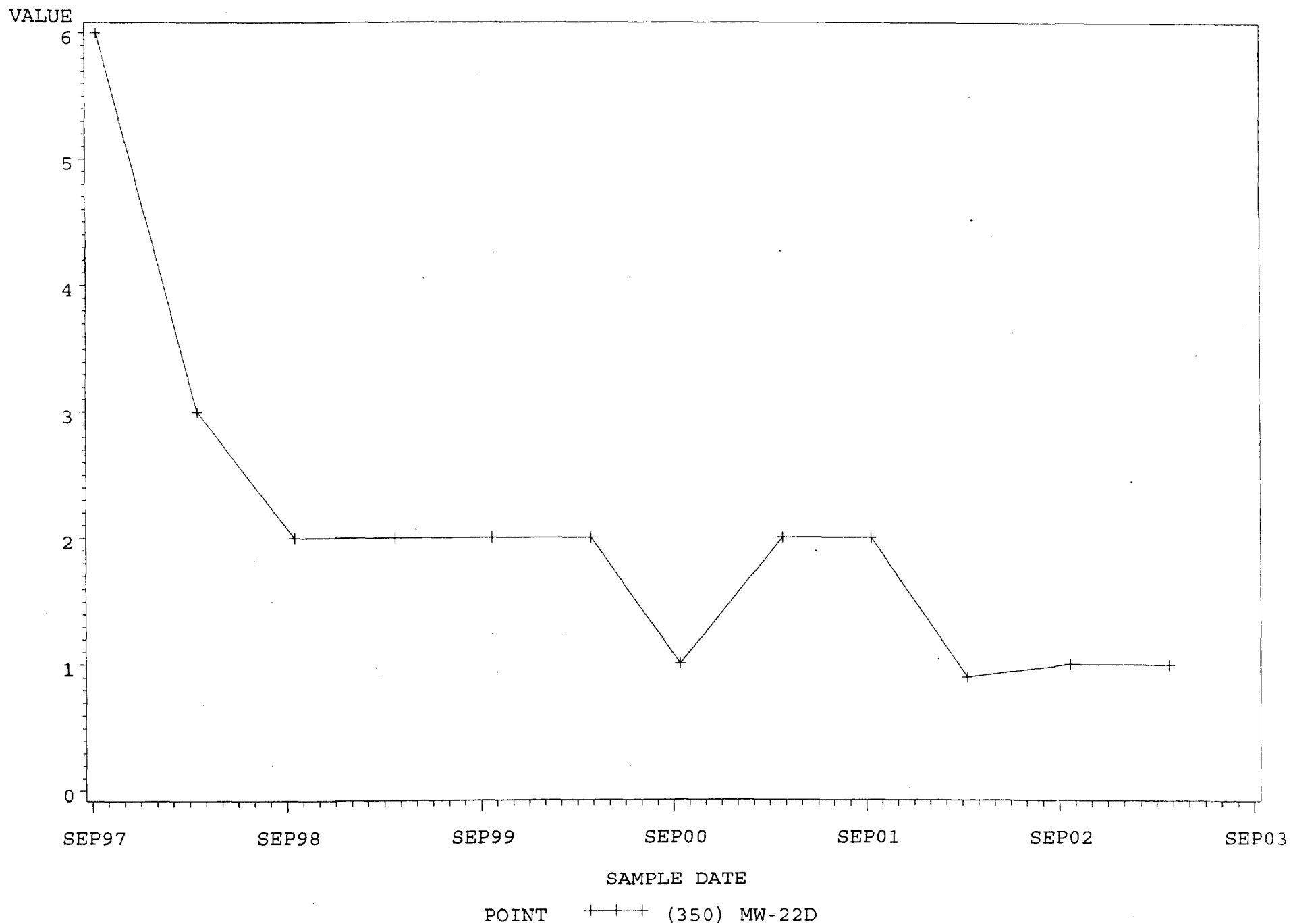
(P) Attains or Exceeds NR140 Preventive Action Limit (E) Attains or Exceeds NR140 Enforcement Standard

D: LOD < Result < LOQ D: Duplicate (Duplications and QC Failures are not included in totals) PWS: Data from Public Water Supply

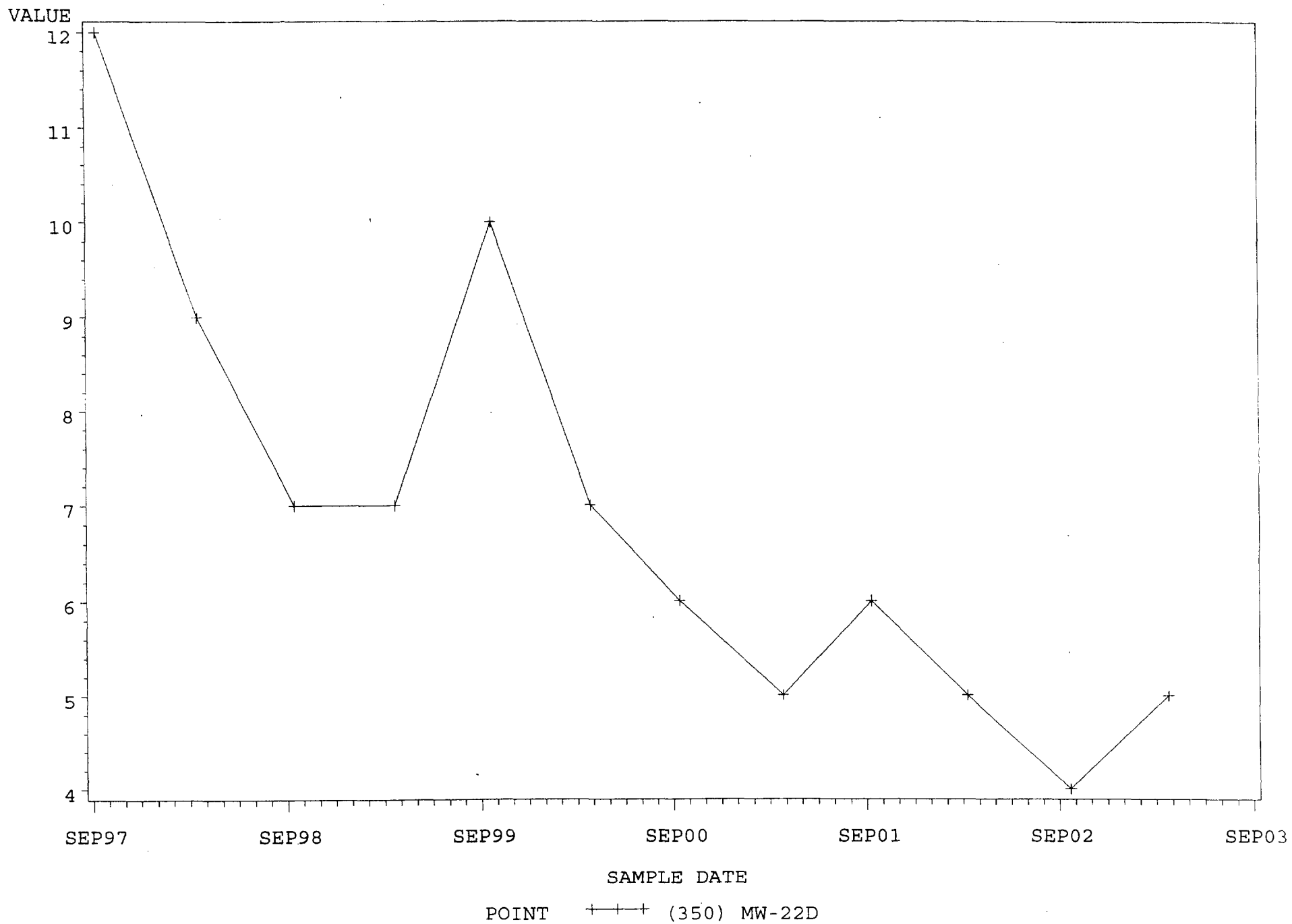
MID-STATE DISPOSAL INC (2812), PARAMETER=39180, TRICHLOROETHYLENE (TCE) IN WHO,



MID-STATE DISPOSAL INC (2812), PARAMETER=39175, VINYL CHLORIDE IN WHOLE WATER,



MID-STATE DISPOSAL INC (2812), PARAMETER=34475, TETRACHLOROETHYLENE IN WHOLE W,



Attachment 4

**Site Inspection Checklist
Monitoring Well Maintenance Needs**

(Working document for site inspection. Information may be completed by hand and attached to the Five-Year Review report as supporting documentation of site status. "N/A" refers to "not applicable.")

D-7

3. **Local regulatory authorities and response agencies** (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply.

Agency Town of Cleveland
Contact Mr. Edward Schaefer Town Chair 2/13/04 715-687-3521
Name Title Date Phone no.
Problems; suggestions; Report attached - interview record attached

Agency _____
 Contact _____

Name	Title	Date	Phone no.
Problems; suggestions; Report attached			

Agency _____
 Contact _____

Name	Title	Date	Phone no.
Problems; suggestions; Report attached			

Agency _____			
Contact _____			
Name	Title	Date	Phone no.
Problems; suggestions;	Report attached		

4. **Other interviews (optional)** Report attached.

Mr. Morris Krall 10/15/03

Mrs. M. Krall 1/15/04

III. ON-SITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)				
1.	O&M Documents <input checked="" type="checkbox"/> O&M manual As-built drawings Maintenance logs Remarks <i>Continue maint. forms in Milwaukee & Schufield Site specific maintenance logbook</i>	<input checked="" type="checkbox"/> Readily available <input checked="" type="checkbox"/> Readily available <input checked="" type="checkbox"/> Readily available	Up to date Up to date Up to date	N/A N/A N/A
2.	Site-Specific Health and Safety Plan Contingency plan/emergency response plan Remarks <i>At SC</i>	<input checked="" type="checkbox"/> Readily available <input checked="" type="checkbox"/> Readily available	Up to date Up to date	N/A N/A
3.	O&M and OSHA Training Records Remarks <i>at STS Milwaukee office + Schufield office</i>	<input checked="" type="checkbox"/> Readily available	<input checked="" type="checkbox"/> Up to date	N/A
4.	Permits and Service Agreements Air discharge permit Effluent discharge Waste disposal, POTW Other permits Remarks	<input checked="" type="checkbox"/> Readily available <input checked="" type="checkbox"/> Readily available <input checked="" type="checkbox"/> Readily available <input checked="" type="checkbox"/> Readily available	<input checked="" type="checkbox"/> Up to date <input checked="" type="checkbox"/> Up to date <input checked="" type="checkbox"/> Up to date <input checked="" type="checkbox"/> Up to date	N/A N/A N/A N/A
5.	Gas Generation Records Remarks <i>at Milwaukee + Schufield offices</i>	<input checked="" type="checkbox"/> Readily available	<input checked="" type="checkbox"/> Up to date	N/A
6.	Settlement Monument Records Remarks <i>same as above</i>	<input checked="" type="checkbox"/> Readily available	<input checked="" type="checkbox"/> Up to date	N/A
7.	Groundwater Monitoring Records Remarks <i>same as above</i>	<input checked="" type="checkbox"/> Readily available	<input checked="" type="checkbox"/> Up to date	N/A
8.	Leachate Extraction Records Remarks <i>in Milwaukee office - monthly haul record sent to project manager</i>	<input checked="" type="checkbox"/> Readily available	<input checked="" type="checkbox"/> Up to date	N/A
9.	Discharge Compliance Records Air Water (effluent) Remarks <i>N/A</i>	<input checked="" type="checkbox"/> Readily available <input checked="" type="checkbox"/> Readily available	<input checked="" type="checkbox"/> Up to date <input checked="" type="checkbox"/> Up to date	N/A N/A
10.	Daily Access/Security Logs Remarks <i>at STS offices</i>	<input checked="" type="checkbox"/> Readily available	<input checked="" type="checkbox"/> Up to date	N/A

IV. O&M COSTS																											
1.	O&M Organization State in-house _____ PRP in-house _____ Federal Facility in-house _____ Other _____	Contractor for State _____ Contractor for PRP <u>STS Consultants</u> Contractor for Federal Facility _____																									
2.	O&M Cost Records Readily available <u>Up to date</u> Funding mechanism/agreement in place <u>- yes</u> Original O&M cost estimate _____ Breakdown attached _____ Total annual cost by year for review period if available <u>- see text of report</u> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">From <u>12/98</u></td> <td style="width: 15%;">To _____</td> <td style="width: 15%;">Total cost _____</td> <td style="width: 15%;">Breakdown attached _____</td> </tr> <tr> <td>From _____</td> <td>To _____</td> <td>Total cost _____</td> <td>Breakdown attached _____</td> </tr> <tr> <td>From _____</td> <td>To _____</td> <td>Total cost _____</td> <td>Breakdown attached _____</td> </tr> <tr> <td>From _____</td> <td>To _____</td> <td>Total cost _____</td> <td>Breakdown attached _____</td> </tr> <tr> <td>From _____</td> <td>To <u>2003</u></td> <td>Total cost _____</td> <td>Breakdown attached _____</td> </tr> <tr> <td>From _____</td> <td>To _____</td> <td>Total cost _____</td> <td>Breakdown attached _____</td> </tr> </table>			From <u>12/98</u>	To _____	Total cost _____	Breakdown attached _____	From _____	To _____	Total cost _____	Breakdown attached _____	From _____	To _____	Total cost _____	Breakdown attached _____	From _____	To _____	Total cost _____	Breakdown attached _____	From _____	To <u>2003</u>	Total cost _____	Breakdown attached _____	From _____	To _____	Total cost _____	Breakdown attached _____
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From _____	To _____	Total cost _____	Breakdown attached _____																								
From _____	To _____	Total cost _____	Breakdown attached _____																								
From _____	To <u>2003</u>	Total cost _____	Breakdown attached _____																								
From _____	To _____	Total cost _____	Breakdown attached _____																								
3.	Unanticipated or Unusually High O&M Costs During Review Period Describe costs and reasons: <u>In general O&M costs have been higher than anticipated.</u> <u>Reason not investigated by reviewer</u>																										
V. ACCESS AND INSTITUTIONAL CONTROLS Applicable N/A																											
A. Fencing																											
1.	Fencing damaged <u>NO</u> Location shown on site map <u>Yes</u> Remarks <u>Gates secured</u> <u>During 1st visit interior fencing around treatment system was not locked. This was corrected by 2nd visit. The exterior fence around site was secure both visits.</u>	N/A																									
B. Other Access Restrictions																											
1.	Signs and other security measures Location shown on site map <u>N/A</u> Remarks <u>Sign at gate indicating presence of hazardous substances</u>																										

C. Institutional Controls (ICs)			
1.	Implementation and enforcement		
	Site conditions imply ICs not properly implemented	Yes <input type="radio"/> No <input checked="" type="radio"/>	N/A
	Site conditions imply ICs not being fully enforced	Yes <input type="radio"/> No <input checked="" type="radio"/>	N/A
	Type of monitoring (e.g., self-reporting, drive by)	Quarterly site visits by STS	
	Frequency	Quarterly	
	Responsible party/agency	STS consultants	
	Contact	Mr. Tim Wolf	Project Eng
	Name		Date
	Title		Phone no.
			414-361-3030
	Reporting is up-to-date	Yes <input type="radio"/> No <input type="radio"/>	N/A
	Reports are verified by the lead agency	Yes <input type="radio"/> No <input type="radio"/>	N/A
	Specific requirements in deed or decision documents have been met	Yes <input type="radio"/> No <input type="radio"/>	N/A
	Violations have been reported	Yes <input type="radio"/> No <input type="radio"/>	N/A
	Other problems or suggestions:	Report attached	
	Filing of affidavit to deed to limit use of site has not been verified		
2.	Adequacy	ICs are adequate <input checked="" type="radio"/> ICs are inadequate <input type="radio"/>	N/A
	Remarks	For the near future existing ICs (WAC) are adequate to prevent human exposure, in distant future deed instrument would be necessary to limit future development.	
D. General			
1.	Vandalism/trespassing	Location shown on site map	No vandalism evident <input checked="" type="radio"/>
	Remarks		
2.	Land use changes on site	N/A	
	Remarks	None observed	
3.	Land use changes off site	N/A	
	Remarks	proposed new residence about 1,000' S of site - (Krall's daughter - well variance issued)	
VI. GENERAL SITE CONDITIONS			
A. Roads	Applicable	N/A	
1.	Roads damaged	Location shown on site map	Roads adequate <input checked="" type="radio"/> N/A
	Remarks		

B. Other Site Conditions			
Remarks _____ _____ _____ _____ _____			
VII. LANDFILL COVERS Applicable N/A			
A. Landfill Surface			
1.	Settlement (Low spots) Areal extent _____ Depth _____ Remarks <u>not visually evident. Observed during survey + discussed in text of 5 year report</u>	Location shown on site map _____ Depth _____	<u>Settlement not evident</u>
2.	Cracks Lengths _____ Widths _____ Depths _____ Remarks _____	Location shown on site map _____ Depths _____	<u>Cracking not evident</u>
3.	Erosion Areal extent _____ Depth _____ Remarks _____	Location shown on site map _____ Depth _____	<u>Erosion not evident</u>
4.	Holes Areal extent _____ Depth _____ Remarks _____	Location shown on site map _____ Depth _____	<u>Holes not evident</u>
5.	Vegetative Cover Grass _____ Trees/Shrubs (indicate size and locations on a diagram) Remarks _____	Cover properly established _____	<u>No signs of stress</u>
6.	Alternative Cover (armored rock, concrete, etc.) Remarks _____	N/A	
7.	Bulges Areal extent _____ Height _____ Remarks _____	Location shown on site map _____ Height _____	<u>Bulges not evident</u>

8.	Wet Areas/Water Damage	<u>Wet areas/water damage not evident</u>	
	Wet areas	Location shown on site map	Areal extent _____
	Ponding	Location shown on site map	Areal extent _____
	Seeps	Location shown on site map	Areal extent _____
	Soft subgrade	Location shown on site map	Areal extent _____
	Remarks _____		
9.	Slope Instability	Slides	Location shown on site map No evidence of slope instability
	Areal extent _____		
	Remarks <u>Very minor sloughing @ southeast corner of sudge lagoon.</u>		
B. Benches Applicable <u>N/A</u>			
(Horizontally constructed mounds of earth placed across a steep landfill side slope to interrupt the slope in order to slow down the velocity of surface runoff and intercept and convey the runoff to a lined channel.)			
1.	Flows Bypass Bench	Location shown on site map	<u>N/A</u> or okay
	Remarks _____		
2.	Bench Breached	Location shown on site map	<u>N/A</u> or okay
	Remarks _____		
3.	Bench Overtopped	Location shown on site map	<u>N/A</u> or okay
	Remarks _____		
C. Letdown Channels Applicable <u>N/A</u>			
(Channel lined with erosion control mats, riprap, grout bags, or gabions that descend down the steep side slope of the cover and will allow the runoff water collected by the benches to move off of the landfill cover without creating erosion gullies.)			
1.	Settlement	Location shown on site map	No evidence of settlement
	Areal extent _____	Depth _____	
	Remarks _____		
2.	Material Degradation	Location shown on site map	No evidence of degradation
	Material type _____	Areal extent _____	
	Remarks _____		
3.	Erosion	Location shown on site map	No evidence of erosion
	Areal extent _____	Depth _____	
	Remarks _____		

4.	Undercutting	Location shown on site map	No evidence of undercutting
	Areal extent _____	Depth _____	
	Remarks _____		
5.	Obstructions	Type _____	No obstructions
	Location shown on site map	Areal extent _____	
	Size _____		
	Remarks _____		
6.	Excessive Vegetative Growth	Type _____	
	No evidence of excessive growth		
	Vegetation in channels does not obstruct flow		
	Location shown on site map	Areal extent _____	
	Remarks _____		
D. Cover Penetrations <u>Applicable</u> N/A			
1.	Gas Vents	<u>Active</u> <u>Passive</u>	<i>Active until 2/2001 Currently passive</i>
	<u>Properly secured/locked</u> <u>Functioning</u>	<u>Routinely sampled</u>	<u>Good condition</u>
	Evidence of leakage at penetration <u>NO</u>	Needs Maintenance	
	N/A		
	Remarks _____		
2.	Gas Monitoring Probes	<u>Functioning</u> <u>Routinely sampled</u> <u>Good condition</u>	
	<u>Properly secured/locked</u>	Needs Maintenance	N/A
	Evidence of leakage at penetration		
	Remarks _____		
3.	Monitoring Wells (within surface area of landfill)	<u>Functioning</u> <u>Routinely sampled</u> <u>Good condition</u>	
	<u>Properly secured/locked</u>	Needs Maintenance	N/A
	Evidence of leakage at penetration		
	Remarks <u>Minor maintenance needs identified in report</u>		
4.	Leachate Extraction Wells	<u>Functioning</u> <u>Routinely sampled</u> <u>Good condition</u>	
	<u>Properly secured/locked</u>	Needs Maintenance	N/A
	Evidence of leakage at penetration		
	Remarks _____		
5.	Settlement Monuments	Located <u>Routinely surveyed</u> N/A	
	Remarks <u>Do not penetrate cap</u>	<u>annually</u>	

E. Gas Collection and Treatment		Applicable	N/A
1.	Gas Treatment Facilities Flaring Good condition Thermal destruction Needs Maintenance Collection for reuse Remarks: <i>Operation of system demonstrated. System currently in passive mode.</i>		
2.	Gas Collection Wells, Manifolds and Piping Good condition Needs Maintenance Remarks: <i>Gas ext'n/venting in passive mode. System maintained & operation was demonstrated.</i>		
3.	Gas Monitoring Facilities (e.g., gas monitoring of adjacent homes or buildings) Good condition Needs Maintenance N/A Remarks: <i>Quarterly monitoring of nearby residential basements</i>		
F. Cover Drainage Layer		Applicable	N/A
1.	Outlet Pipes Inspected Functioning Remarks:		N/A
2.	Outlet Rock Inspected Functioning Remarks:		N/A
G. Detention/Sedimentation Ponds		Applicable	N/A
1.	Siltation Areal extent _____ Depth _____ Siltation not evident Remarks:		N/A
2.	Erosion Areal extent _____ Depth _____ Erosion not evident Remarks:		
3.	Outlet Works Functioning Remarks:		N/A
4.	Dam Functioning Remarks:		N/A

H. Retaining Walls		Applicable	<u>N/A</u>
1.	Deformations	Location shown on site map	Deformation not evident
	Horizontal displacement _____	Vertical displacement _____	
	Rotational displacement _____		
	Remarks _____		
2.	Degradation	Location shown on site map	Degradation not evident
	Remarks _____		
I. Perimeter Ditches/Off-Site Discharge		Applicable	N/A
1.	Siltation	Location shown on site map	<u>Siltation not evident</u>
	Areal extent _____	Depth <u>Approx 2-2.5 feet</u>	
	Remarks <u>undisturbed + clean</u>		
2.	Vegetative Growth	Location shown on site map	N/A
	<u>Vegetation does not impede flow</u>		
	Areal extent _____	Type _____	
	Remarks _____		
3.	Erosion	Location shown on site map	<u>Erosion not evident</u>
	Areal extent _____	Depth _____	
	Remarks _____		
4.	Discharge Structure	<u>Functioning</u>	N/A
	Remarks _____		
VIII. VERTICAL BARRIER WALLS		Applicable	<u>N/A</u>
1.	Settlement	Location shown on site map	Settlement not evident
	Areal extent _____	Depth _____	
	Remarks _____		
2.	Performance Monitoring	Type of monitoring _____	
	Performance not monitored		
	Frequency _____	Evidence of breaching	
	Head differential _____		
	Remarks _____		

IX. GROUNDWATER/SURFACE WATER REMEDIES		Applicable	N/A
A. Groundwater Extraction Wells, Pumps, and Pipelines		Applicable	N/A
1.	Pumps, Wellhead Plumbing, and Electrical Good condition All required wells properly operating Needs Maintenance N/A Remarks _____ _____ _____		
2.	Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances Good condition Needs Maintenance Remarks _____ _____ _____		
3.	Spare Parts and Equipment Readily available Good condition Requires upgrade Needs to be provided Remarks _____ _____ _____		
B. Surface Water Collection Structures, Pumps, and Pipelines		Applicable	N/A
1.	Collection Structures, Pumps, and Electrical Good condition Needs Maintenance Remarks _____ _____ _____		
2.	Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances Good condition Needs Maintenance Remarks _____ _____ _____		
3.	Spare Parts and Equipment Readily available Good condition Requires upgrade Needs to be provided Remarks _____ _____ _____		

C. Treatment System		Applicable	N/A
1.	Treatment Train (Check components that apply) Metals removal _____ Oil/water separation _____ Bioremediation _____ Air stripping _____ Carbon adsorbers _____ Filters _____ Additive (e.g., chelation agent, flocculent) _____ Others _____ Good condition _____ Needs Maintenance _____ Sampling ports properly marked and functional _____ Sampling/maintenance log displayed and up to date _____ Equipment properly identified _____ Quantity of groundwater treated annually _____ Quantity of surface water treated annually _____ Remarks _____		
2.	Electrical Enclosures and Panels (properly rated and functional) N/A _____ Good condition _____ Needs Maintenance _____ Remarks _____		
3.	Tanks, Vaults, Storage Vessels N/A _____ Good condition _____ Proper secondary containment _____ Needs Maintenance _____ Remarks _____		
4.	Discharge Structure and Appurtenances N/A _____ Good condition _____ Needs Maintenance _____ Remarks _____		
5.	Treatment Building(s) N/A _____ Good condition (esp. roof and doorways) _____ Needs repair _____ Chemicals and equipment properly stored _____ Remarks _____		
6.	Monitoring Wells (pump and treatment remedy) Properly secured/locked _____ Functioning _____ Routinely sampled _____ Good condition _____ All required wells located _____ Needs Maintenance _____ N/A _____ Remarks _____		
D. Monitoring Data			
1.	Monitoring Data Is routinely submitted on time _____ Is of acceptable quality _____		
2.	Monitoring data suggests: Groundwater plume is effectively contained _____ Contaminant concentrations are declining _____		

D. Monitored Natural Attenuation

1. **Monitoring Wells** (natural attenuation remedy)
- | | | | |
|----------------------------|-------------------|-------------------|----------------|
| Properly secured/locked | Functioning | Routinely sampled | Good condition |
| All required wells located | Needs Maintenance | | N/A |
- Remarks _____

X. OTHER REMEDIES

If there are remedies applied at the site which are not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.

XI. OVERALL OBSERVATIONS**A. Implementation of the Remedy**

Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.).

The covers on the 3 waste areas are intended to minimize infiltration which they appear to do. Leachate collection intended to reduce discharge of contaminants to groundwater which appears to be happening. Gas venting system is intended to prevent migration of landfill gases to receptor, which is successful based on gas probe monitoring.

B. Adequacy of O&M

Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy.

O&M is adequate. With continuation of passive venting the agencies require that equipment for active extraction + treatment of gases be maintained such that system can be re-started immediately in case of negative impact such as methane migration or increased concentrations in groundwater.

C. Early Indicators of Potential Remedy Problems

Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs, that suggest that the protectiveness of the remedy may be compromised in the future.

NO early indicators of remedy failure noted.

D. Opportunities for Optimization

Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy.

Continued passive gas venting w/ contingency
for active extraction

Mid-State Disposal
Site Inspection, October 7, 2003
Monitoring Wells

Well #	Locked	Labelled	Ground Seal	Other Comments
MW-3	OK	OK		
MW-4	OK	OK	Concrete, 8" higher than ground surface	Seal must be replaced Elevation may need to be re-shot. Note 1
MW-5	OK	OK	Boulders!!	Located in drainage swale. Add'l info. & evaluation needed. Note 1
MW-6				
MW-7	OK	OK		@toe of cap, pro-top not vertical, PVC riser 0.5" higher than pro-top
MW-8	OK	OK	OK	
MW-9	OK	OK	Concrete, 3" higher than surrounding ground surface	Raise ground surface or re-do seal, and possible re-shoot elevation. Note 1
MW-10	Ok	OK	OK	PVC 0.5" higher than pro-top. Raise pro-top, possible re-shoot elevation.
MW-11	OK	OK	OK	
MW-12	OK	OK	OK	
MW-13	OK	OK	OK	
MW-14	OK	OK		Need to raise ground surface around pro-top.
MW-15	OK	OK		Well appears heaved upward 2.5' Note 1
MW-16S	OK (Master padlock)	OK	OK	Outside site fence, along ATV trail. 6" dia. Pro-top Note 1
MW-16D	OK (Master padlock)	OK	OK	Outside site fence, along ATV trail. 6" dia. Pro-top Note 1
MW-17	OK	OK	OK	Note 1
MW-18	OK	OK	OK	
MW-19	OK	OK	OK	Pro top about 18" taller than will riser. One bumper post knocked over. Note 1
MW-22S	Ok	OK	OK	Note 1
MW-22D	OK	OK	OK	Note 1
MW-23	OK	OK	OK	
MW-24S	OK	OK	OK	
MW-24D	OK	OK	OK	
MW25	OK	OK	OK	
MW-26S	OK	OK	OK	
MW-26D	OK	OK	OK	Ground surface needs to be raised. Note 1
MW-27	OK	OK	Needs bentonite repair.	
MW-28	OK	OK	Not good seal, riser wobbles.	Galvanized riser, no pro-top. Note 1
MW-29	OK	OK	OK	
MW-30	OK	OK	OK	
MW-31S	OK	OK		Pro-top 14" higher than PVC. Needs evaluation & repair, possible re-

				shoot elevation.
MW-31D	OK	OK	OK	
Well #	Locked	Labelled	Ground Seal	Other Comments
PZ-1	No	OK	OK	Note 1
PZ-2				
PZ-3	OK	OK	Concrete broken	Needs repair

Note 1: 5 Year performance Evaluation Report, by STS, dated January 1999, pg. 36, Sec. 7.2: Well noted as having loose or heaved pro top.

Attachment 5

Interview Records

INTERVIEW RECORD

Site Name: <u>Mid-State Disposal</u>		EPA ID No.: <u>WID980823082</u>	
Subject:		Time:	Date: <u>2/13/04</u>
Type: <input checked="" type="checkbox"/> Telephone <input type="checkbox"/> Visit <input type="checkbox"/> Other Location of Visit:		<input type="checkbox"/> Incoming <input checked="" type="checkbox"/> Outgoing	
Contact Made By:			
Name: <u>E. Kramer</u>	Title: <u>Hydrogeologist</u>	Organization: <u>WDNR</u>	
Individual Contacted:			
Name: <u>Edward Schnelle</u>	Title: <u>Town Chair</u>	Organization: <u>Town of Cleveland</u>	
Telephone No: <u>715-687-3561</u>	Street Address: <u>C2070 Rock Rd.</u>		
Fax No:	City, State, Zip: <u>Stratford, WI 54484</u>		
E-Mail Address:			
Summary Of Conversation			
<p>Mr. Schnelle has no concerns about work at Mid-State. Has not heard of any complaints or concerns from nearby residents.</p>			

INTERVIEW RECORD

Site Name: <u>Mid-state Disposal</u>		EPA ID No.: <u>W10980823082</u>	
Subject:		Time:	Date: <u>10/7/03</u>
Type: <input type="checkbox"/> Telephone <input checked="" type="checkbox"/> Visit <input type="checkbox"/> Other Location of Visit: <u>Big Rapids Road</u>		<input type="checkbox"/> Incoming <input type="checkbox"/> Outgoing	
Contact Made By:			
Name: <u>E Kramer</u>	Title: <u>Hydrogeologist</u>	Organization: <u>WTR</u>	
Individual Contacted:			
Name: <u>Mr. Morris Krall</u>	Title: <u>Home owner</u>	Organization:	
Telephone No: Fax No: E-Mail Address: <u>NA</u>	Street Address: <u>1763 Big Rapids Road</u> City, State, Zip: <u>Town of Cleveland Wisconsin</u>		
Summary Of Conversation			
<u>Mr. Krall reported being satisfied with work done at site.</u>			

INTERVIEW RECORD		
Site Name: Mid State Disposal		EPA ID No.: WID980823082
Subject:		Time: 3:30pm Date: 1/15/04
Type: <input type="checkbox"/> Telephone <input checked="" type="checkbox"/> Visit <input type="checkbox"/> Other Location of Visit: @ Krall Residence		<input type="checkbox"/> Incoming <input type="checkbox"/> Outgoing
Contact Made By:		
Name: E. Kramer	Title: Hydrogeologist	Organization: W DNR
Individual Contacted:		
Name: Mrs. Krall	Title: Homeowner	Organization:
Telephone No:	Street Address: 1763 Big Rapids Rd.	
Fax No:	City, State, Zip: Town of Cleveland	
E-Mail Address:	Wisconsin	
Summary Of Conversation		
<p>Mrs. Krall said she has no problems w/ the site, that it is much better than it was in the past.</p> <p>Her daughter is building a new home immediately east of the Krall home in the spring of 2004.</p> <p>(Note: A well variance in accordance w/ NR812 has been issued requiring casing to 50' bgs.)</p>		